AMERICAN GAS JOURNAL

AUGUST 1940

ROBERTSHAW HEAT CONTRO

Another big step forward in simplification—heat control and cook handle combined in a single unit and operated with motion! That saves time for the user. Also it ensures greate in baking and roasting, the control must be brought back to time the gas is turned off, must be reset each time it is turne cooking by gas offers every advantage, including the highe ment of automatic control.

SIMPLE TO SERVICE

ew simplified front calibration, by-ss and pilot adjustment. Can be ecked with absolute accuracy at om temperature.

Oven valve and thermostat assem-y form one unit removable from front thout disturbing fittings. Cannot be placed incorrectly.

ARE YOUR SALESMEN ARMED WITH THIS EFFICIENT SALES MANUAL? It's boosting earnings for thousands of salesmen every working day. Write for a copy—free.

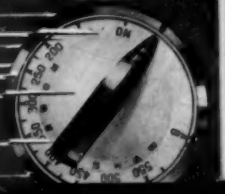
SIMPLE TO OPERATE

A single motion TURNS GAS ON FULL SETS CONTROL

LIBRARY OF CONGRESS · SEP 20 1940 · PERIODICAL DIVISION

A single motion TURNS GAS OFF RETURNS CONTROL TO ZERO

ROBERTSHAW SPEEDS SALES

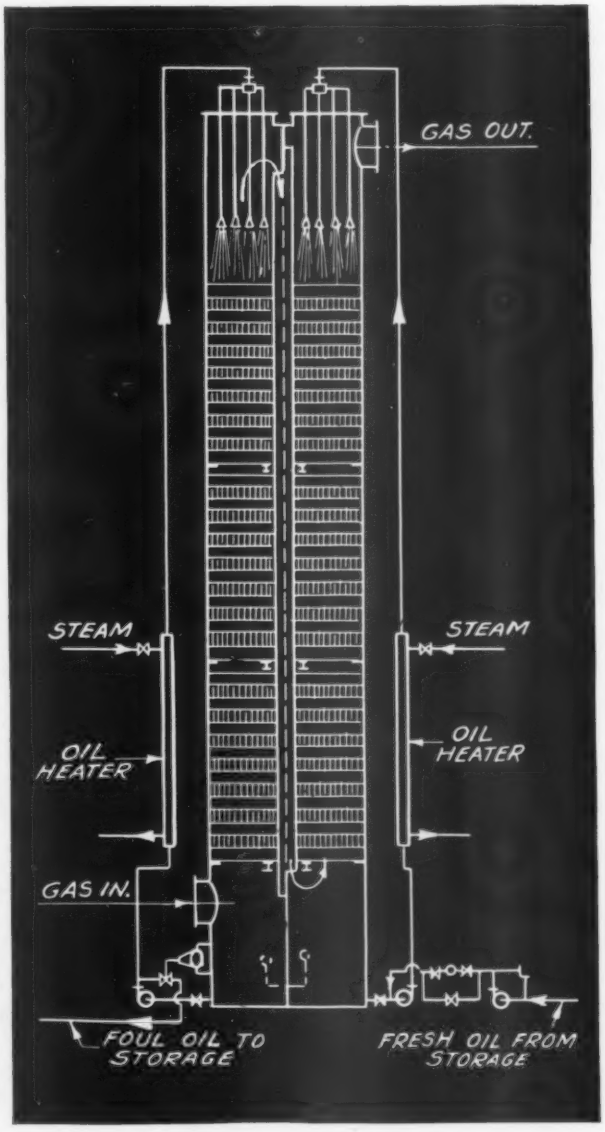


ROBERTSHAW THERMOSTAT COMPANY, YOUNGWOOD, PA.

CAST IRON PIPE

THE STANDARD MATERIAL FOR UNDERGROUND MAINS

How much are you paying for *not* removing naphthalene?



The cost of operating a Semet-Solvay Oil Scrubber, even including interest on the investment, is so small that the important question is not how much it costs to operate it but how much you may be paying for *not* removing naphthalene and other impurities from your gas before it enters the mains.

Distribution troubles, and service calls that are so costly both in dollars and cents and in public good will, are being materially reduced where the Semet-Solvay Oil Scrubber is in use. As more and more of the modern type of gas appliances come into use, equipment for cleaning gas becomes more and more necessary.

The Semet-Solvay Oil Scrubber is of the two-pass type. Fresh oil is added *continuously* in a very small stream, thereby keeping the circulating oil always below the saturation point and assuring maximum absorption of naphthalene and other impurities with minimum use of oil. The fouled oil is not lost but is used for carburetion in the water gas set.

Let us tell you more about the Semet-Solvay Oil Scrubber.

SEMET-SOLVAY OIL SCRUBBER

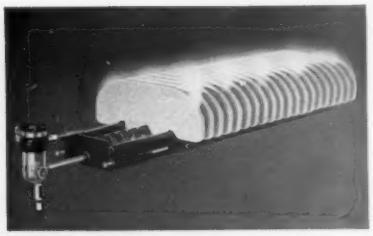
for removing naphthalene and other impurities

SEMET-SOLVAY ENGINEERING — **CORPORATION**

SEMET-SOLVAY ENGINEERING CORP. WE SELL SOLUTIONS TO HARD PROBLEMS NEW YORK

40 RECTOR STREET — NEW YORK, N. Y.

A MESSAGE
to men who sell
CONDITIONED AIR HEATING



THE main appeal of conditioned air heating is its healthfulness. Its most important **health** feature is that it rehumidifies the warmed and hence dried indoor air.

Yet it is no trade secret that the average conditioner is equipped with a humidifier that is definitely inadequate. A glance at the chart below enables you to compare the evaporating area required with the small area supplied in many conditioners. This will explain why such conditioners fail to provide the adequate humidity that purchasers rightfully expect.

A humidifier of modern design and adequate capacity adds powerful "buy" appeal to an air conditioning furnace. Home owners are realizing more and more that the modern way is to **warm for comfort** and **humidify for health.**

The manufacturers who equip their conditioners with Monmouth humidification have spent a little more to give you adequate and modern humidifying equipment. Such conditioners enable you to emphasize humidity and health, and, thus convert more home owners to modern conditioned air heating with gas.

Fire Pot Diam.	Bonnet Output BTU's	Evaporating Capacity Required			
		Gravity — Or Forced Air If Weatherstripped		Forced Air If Not Weatherstripped	
20"	72000	400	8	800	16
22"	90000	500		1000	20
24"	108000	600	12	1200	24
26"	126000	700		1400	28
28"	144000	800	16	1600	32
29"	162000	900		1800	36
31"	180000	1000	20	2000	40
34"	216000	1200	24	2400	48
	252000	1400	28	2800	56
	288000	1600	32	3200	64
	324000	1800	36	3600	72
Coal Hand Fired	Oil, Gas, or Stoker Fired	Sq. Ins. Water Surface	Number of Plates	Sq. Ins. Water Surface	Number of Plates

The Monmouth Humidifier, with Monite vapor diffusing plates, is the only humidifier having scientifically rated humidifying capacity. Monmouth humidity controls are incomparably in advance of others.

That you may make full use of your sales ammunition let us send you data on humidifying capacity required by any conditioner and complete information regarding the exclusive advantages of Monmouth.

MONMOUTH PRODUCTS CO.

1939 E. 61st Street

Cleveland, Ohio

MONMOUTH

The Greatest Name in Humidification

SEP -9 1940 ©CIB 467352

VOLUME 153
NUMBER 2

AMERICAN GAS JOURNAL

WHOLE
NUMBER 3800

ESTABLISHED 1859

AUGUST, 1940

PUBLISHED MONTHLY BY
AMERICAN GAS JOURNAL, Inc.
53 Park Place, New York

S. G. KRAKE, *President and Treasurer*
M. E. KELLEHER, *Secretary*
A. I. PHILLIPS, *Editorial Director*
H. T. MATTHEW, *Business Manager*
JAMES C. MUNN, *Midwest Representative*
10515 Wilbur Ave., Cleveland, Ohio
Tel. Garfield 1055
THOMAS MORGAN, *Western Representative*
168 N. Michigan Ave.
Chicago, Ill.

Copyright 1940, American Gas Journal, Inc.

Subscription $2.00 per year U.S.A.; $3.00 Canada; $4.00 Foreign. Single copies, 25 cts.

Contents

It Pays Off—That Carefully Planned Window Display—Mac Roy Rasor 7

Cooperative Gas Display, a Feature at California Home Show—Fred A. Herr 9

Gas Meter Accuracy in Relation to Public Good Will—George L. Budnick 10

Natural Gas for Lime Burning—T. J. Skrabanek 12

Installing Suction Pump Piping—W. F. Schaphorst 14

Fink Main Joint Tester 15

Housing Survey Shows 95% Use Gas for Cooking 17

Gay Nineties Week Boosts Gas Stock—Fred E. Kunkel 18

The Selling Parade—Charles B. Roth 23

Avoid Liabilities for Injuries Caused by Gas Appliance Explosions—Leo T. Parker 26

Geochemical Prospecting—S. E. Slipper 31

Pre-Cast Manholes 34

New Equipment & Appliances 36

News of the Gas Industry 39

AMERICAN GAS JOURNAL, August, 1940. Vol. 153, No. 2. Published monthly by American Gas Journal, Inc., at 34 North Crystal St., East Stroudsburg, Pa. Executive and Editorial offices at 53 Park Place, New York, N. Y. Entered as second-class matter, October 7, 1928, at the post-office at East Stroudsburg, Pa., under the Act of March 3, 1879. Printed in U. S. A.

Your meter dollar buys more
because of continuous modernization
AMERICAN METER CO
MEASUREMENT ENGINEERS
GENERAL OFFICES · 60 EAST 42ND STREET NEW YORK N Y
AMERICAN METER COMPANY
INCORPORATED ESTABLISHED 1836
C-1104

AUGUST
1940

AMERICAN
GAS JOURNAL

VOLUME 153
No. 2

It Pays Off—That Carefully Planned Window Display

By
Mac Roy Rasor

IT PAYS OFF—the way the Texas Public Service Company of Austin, Texas, plans and constructs its window displays. One of the best sales attracters the company has yet been able to develop, every effort is made to maintain its display windows among the best eye-arresters in the Southwest. And the effort is no idle dream; for the windows daily bring many customers into the store that might have otherwise passed on by, sales conversation has proved.

"We do not feel that any window is of any less importance than any other, even though it may be the last one on the side street. Someone may see that window who doesn't notice the others, and a possible sale is in preparation," S. M. Apperson, sales manager of the company, explains.

The company has always placed particular emphasis on its window displays, even though until a few weeks ago it had only two windows in which to display its merchandise. Recently it moved into a spacious new building, constructed especially to the company's plans and specifications, which provided for five display windows.

Behind a cream brick exterior, trimmed with buff and brown brick, chromium and red granite, stands two floors and a basement of the most modernly designed and conveniently planned architecture.

Lending distinction to the modern structure are the two large display windows in the front and three identical windows on the north side which furnish an attractive setting for the beauty of modern gas appliances. The first floor is devoted to local offices in the back and a large sales floor in the front. The windows are open, leaving the sales floor to form the major part of the background for window displays. Thus it is possible to make the displays easily accessible for inspection of customers.

"You can't crowd up a window display for best results," Mr. Apperson believes. "A passerby must be able to see the display, comprehend its significance, and retain a definite impression in a single glance. But the display should be eye-catching and appealing enough to make him want to stop and look at it a little longer."

And that is the way that the Texas Public Service Company plans all its displays. There is no long text to be read, no insignificant frills, no conglomeration of unrelated appliances. Rather, an individual appliance is singled out to be featured. Two or perhaps three will be used when gas itself is the central theme of the display. But each unit in the window must be related to that central theme.

When the central theme has been decided on, the most appealing "teaser" or "eye-catcher" that can be thought of is designed and tied in with the display. A lazy hillbilly sleeping under the shade of a tree might serve to illustrate the slogan, "No moving parts," for an Electrolux refrigerator display. Or a fisherman with a prize catch might advertise the ease of cooking with a modern gas range whether "for a nibble or a big bite."

A favorite device of the company is to employ flat statuettes of cartoon characters, attractively painted, which can be set out from the background for more life-like effect. Brilliant colors are used but they are always chosen within harmony and for pleasing effect on the eye.

Flowers are a standby of the company to supply natural beauty both to the window displays and to decorate the sales floor. The ease of adaptability of flowers makes them unusually effective for any type of display.

"The money, time, and energy spent in planning our window displays is considered one of our wisest investments," Mr. Apperson says in explanation of the slightly larger than average budget being allotted to this type of advertising. "Expert workmanship is always used to make the display appeal to the most exacting. The little difference in cost is fully made up in saved time and finished appearance. The minute difference spent on our windows and on the average window is the difference between going unnoticed and commanding attention."

The company's policies have been worked out from the wisdom of many years' experience and experimentation. They are the result of scien-

1

2

3

4

1—Simple and without pretense, the new Texas Public Service Company building is of cream brick exterior, trimmed with buff and brown brick, chromium, and red granite. The company insisted in its plans upon five large display windows.

2—Two or perhaps three appliances will be used in a single display when gas itself is the central theme of the display.

3—A favorite device of the company is to employ flat statuettes of cartoon characters, attractively painted, which can be set out from the background for more life-like effect.

4—Or a fisherman with a prize catch might advertise the ease of cooking with a modern gas range whether "for a nibble or a big bite."

tific study—not an overnight blitzkrieg.

And is the Texas Public Service Company getting results? So much so that it moved into its modern new building a few weeks ago to climax fifty-one years of service to the community.

The new store's plan has been designed and arranged toward three main objectives—simplicity, convenience, and expansion. The basement as well as the first floor is occupied by the sales department, where offices, appliances, and displays are housed.

Executive and general accounting offices are located on the second floor. It is here that all other Texas properties owned by the company are handled, necessitating the large office space that has been devoted to the division.

The interior is finished throughout in cream with white ceilings, and sound proofing material has been employed wherever advantageous.

The entire building has been newly equipped with air conditioning equipment, heating, cooling, and ventilating by gas.

A few days after the company moved into its new building the doors were swung open to the public while the employes held open house, acting as guides to visitors and serving them with refreshments of cookies and punch. The entire office force was on hand to greet visitors interested in seeing the modern new building. Approximately 3,100 persons attended the opening, and fifty-six floral displays were sent by friends of the company. The building remained open until 9 o'clock.

The five executives and department heads of the service company have contributed ninety-two years of combined service in aiding in the firm's development and expansion. William Lawlor, Jr., president of the company, has been with the firm 28 years, starting in 1913 as superintendent of the gas manufacturing plant. Mr. Apperson has spent 25 years with the company, beginning in the manufacturing plant and advancing to sales manager in 1928. A. M. Fitzpatrick, manager of the ice and cold storage department, has contributed 21 years of service, holding his same position during the entire time. M. B. Pigott, assistant secretary and treasurer, came to the company 16 years ago as a billing clerk and has worked his way up through numerous intermediate offices. A. S. Hall is the newest member of the staff, joining the company three years ago as superintendent.

They are all agreed on the effectiveness of scientific, modern window displays.

And why all the emphasis on window displays? For the same reason that a firm advertises in the newspapers and on the radio. For the same reason that salesmen are hired. For the same reason that a company builds up a name for dependability and reliability.

In the words of Mr. Apperson:

"It pays off!"

Cooperative Gas Display a Feature At California Home Show

By
Fred A. Herr
Los Angeles

THE GAS industry of Southern California united in a comprehensive campaign to "sell" gas as the premier home utility at the Third Annual California Home Show which was held at the Pan Pacific Auditorium, Los Angeles, from May 25 to June 5.

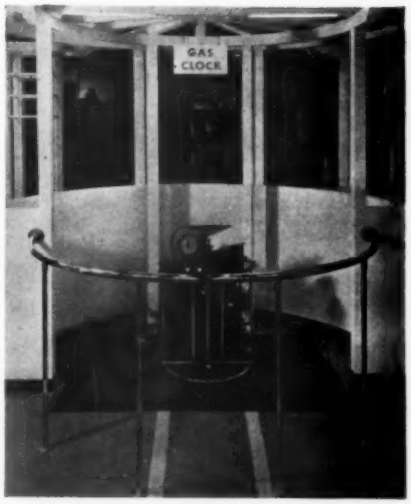
The show was conducted under the auspices of the Building Contractors' Association of California, Los Angeles Chapter, in collaboration with special committees representing chapters in districts contiguous to Los Angeles. The attendance was in excess of 100,000 persons.

The Natural Gas Bureau, Southern California Gas Co., Southern Counties Gas Co., Pacific Lighting Corp. and other gas utility firms cosponsored the largest display the gas industry has presented at any west coast home show.

The main gas display, a comprehensive booth some 50 by 100 feet in dimension, was presented under the auspices of Harvey H. Holden of the Natural Gas Bureau, Los Angeles, and various companies who serve as agents or distributors of national appliance manufacturers. The main booth was replete with latest models of gas ranges, refrigerators and water heaters. Surrounding the main display were smaller booths, sponsored by the manufacturers of 12 different makes of gas water heaters, gas refrigerators, gas floor and wall heaters, furnaces, water softeners, and gas-fired home air conditioning equipment.

The program of the gas industry dealt largely with educational features to acquaint the public with all phases of the industry. A popular attraction was a gas-operated kitchen which, set at the entrance to the main gas booth and topped by a huge sign reading "Use Gas, The Modern Fuel," served as the gateway for visitors to the exhibits of gas appliances and equipment in the rear. The kitchen was equipped with the latest model gas range, refrigerator and water heater. An attention-getter, too, was a hydraulic dish washer powered by water supplied by a gas-operated hot water heater.

An attraction at the farther end of the main gas booth was a gas-operated clock, which drew much favorable comment because of the novelty of its operation and the beauty of its streamlined design. The clock, new to the west coast and relatively new, also, to the United States as a whole, has been shown at few places in this country since being developed by the Milnes Electrical Engineering Co., Ltd., of Yorkshire, Eng. A model was brought to California by Mr. Holden of the Natural Gas Bureau to permit the public to see one of the manifold practical uses to which gas can be put. The clock is operated by a thermoelectric generator similar to the unit used in running the gas radio developed by the same firm. The electricity is supplied directly from the heat provided by the domestic gas supply through a thermopile in the generator. The principle of its operation is that when heat is applied to a joint of two special metaloids or thermo-couples, a current of electricity is produced. To put the clock in operation all that need be done is to light the series of tiny gas jets in the metal housing of the interior unit.



Gas operated clock, which drew considerable attention in the gas equipment booth sponsored at the Third Annual Southern California Home Show by the Natural Gas Bureau in collaboration with various gas companies and appliance manufacturers.

View through model gas kitchen into main gas industry booth at the Third Annual Southern California Home Show. The kitchen featured the latest equipment in gas ranges, gas refrigerators and gas water heaters. Wire basket in sink, left, is hydraulic dish washer operated with hot water from gas water heater.

Two model homes—one in the $5,000 and the other in the $3,000 class—featured gas in so many of their services that they virtually fell into the category of "all-gas equipped" houses. The larger house was sponsored by the Building Contractors' Association of California; the

smaller, by the *Downtown Shopping News* of Los Angeles. Gas equipment in both houses was supplied by the Natural Gas Bureau.

In the six-room larger house the four main jobs of cooking, refrigeration, water and house heating were accomplished with gas. The kitchen was an "all gas" job, featuring a Servel gas refrigerator and a Magic Chef gas range. A Ruud gas water heater on the service porch supplied hot water for kitchen and bathroom. Room heating was accomplished with a forced air gas furnace with 80,000 B.t.u. per hour output and 100,000 B.t.u. per hour input, and a Pacific blower unit.

The five-room smaller house was serviced by gas throughout except for refrigeration, which was in the form of a natural-ice refrigerator. The kitchen was equipped with a Magic Chef gas range and a Comet gas water heater. Room heating was accomplished with a dual floor furnace recessed into floor and wall of the living room, with a grille also opening into an adjoining hallway leading to the bathroom. Installed by the Deluxe Furnace Co. of Los Angeles, this floor unit has an output of 25,000 B.t.u. per hour.

Individual display booths were maintained by the following gas equipment distributors and manufacturers:

Ashburn Brothers, Heating, Inc., Los Angeles, featuring Hammel sectional unit gas furnaces, gas steam radiators, wall heaters, gas steam consoles, floor furnaces, dual wall furnaces and cool air units.

Monarch Heating Co., Los Angeles, featuring pipeless circulating gas furnaces, dual and floor furnaces for living room, dining room and bathroom.

General Water Heater Co., Burbank, Calif., featuring "generiser" equipped, radio valve water heaters.

Payne Furnace and Supply Co., Beverly Hills, Calif., featuring forced air gas operating heating units, and gas-fired air conditioning installations for home use.

Other booths displayed Hoyt gas water heaters, Ruud gas water heaters, Pacific gas radiators, Andrews gas space heaters, and Servel and Electrolux gas refrigerators.

Gas Meter Accuracy in Relation to Public Good Will

By

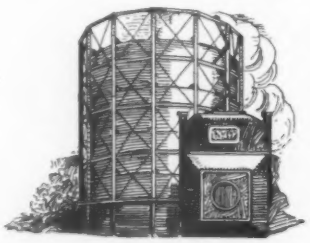
George L. Budnick

Superior Water, Light and Power Company
Superior, Wisconsin

THE EARLY TYPE of gas meter, known as the wet meter, was so named because its make-up required a liquid which had to be kept at a certain level. This type of meter was very accurate and is still in use. Although very accurate, it is not practical in gas measuring such as we have in every day use. The wet meter is accurate so long as the liquid remains at a given level but temperature changes and evaporation affect this level; thus it is readily seen that a different type of meter was needed —one which would measure gas accurately under varying conditions and temperatures, one which would require the least amount of attention.

Today's gas meter, known as the dry type meter, is made up of a set of diaphragms and valves, and measures the gas going through it by positive displacement—a given number of compartments of gas to the cubic foot. This type of meter is very successful, inasmuch as it registers very accurately the amount of gas passing through it, under the varying conditions that exist in all climates and on all premises.

Meter manufacturers advertise their gas meters as "The Silent Watchman" or "Your Silent Watchman on Every Service," or some other such slogan, to impress on the many gas companies the value in accuracy and the smoothness of mechanism in their particular product. Gas meter manufacturers have truly made great advances in the construction of meters. Although the meter



of today is the same in principle as the meter of seventy-five years ago, its structure has been greatly improved. With practically no difference in outside dimensions, its capacity has been increased to twice the capacity of the original dry type meter. That meter manufacturers are doing a good job is proved by the sustained accuracy of the meters of today as compared with the original dry type meter.

Very few of the gas-using public realize the true measuring qualities of the modern gas meter. True, it is bulky and somewhat unpleasant to look at, but on the other hand, if the customer understood how reliably the gas was being measured, his attitude toward the Gas Company would no doubt be more fair.

We in the gas industry know and accept the meter manufacturers' measuring unit as being dependable and consistently accurate. It is our job, then, to sell this idea to the gas-consuming public, who through misunderstanding or lack of knowledge, have a misconception of the true measuring qualities of the modern gas meter. It is our job to show them, and make them understand, that they are getting true value for every dollar spent for gas, as measured by their gas meters. When we have convinced them of this fact, a big advance in public relations will be realized.

Utility employees coming in contact with the gas-using public have often been questioned as to the accuracy of gas meters. Many customers look upon their meters with distrust and wonder how fast they are "set up." Why does this condition exist? Because the customer does not know the facts; he does not know how consistently accurate the meter really is. It is true he may have been misinformed by an employee who did not fully understand the true measuring qualities of a gas meter. Educating the employee to these facts would certainly be taking the first step in the right direction.

Digressing somewhat from the subject of gas meters, let us check up on the every-day purchases of our customers and see how other products compare with metered gas for accuracy.

For example: We pay for a ton of coal; we may get two thousand pounds, but is it all coal? Does it give you the heat you got out of your last ton? When you buy a pound of prunes, so marked on the package, does it weigh a pound? Is that nickel cigar always of the same quality? How about that six-inch board or two-by-four you pay for—is it two-by-four? It is not. So, too, with the other questions—most of them could be answered in the negative. That pound of prunes may be only one ounce light, but that is a shortage of six per cent. That ton of coal may contain varying amounts of impurities such as moisture in the form of water, snow or ice. A six-inch board is only about five and one-half inches wide, and a two-by-four measures about one and one-half by three and one-half. Those nickel cigars—but why go further? The customer very often pays for something that he really does not get, and accepts it as fair. This is probably true because he sees what he buys in bulk, delivered to him over the counter, or by delivery. The percentage of this undelivered but paid-for shortage or impurity may often run very high.

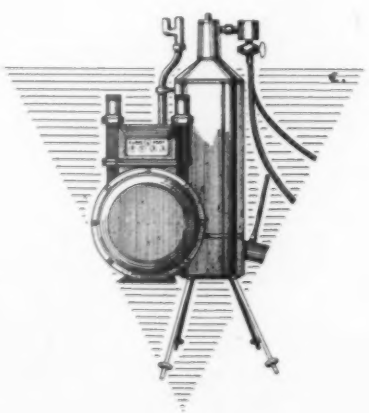
It would be unfair to say that all customers are skeptical concerning their gas meters, but the very fact that many are, warrants doing something to change this condition. This can be done, with few exceptions, by showing those customers that their meters must be, and are, accurate. To prove this point, gas utilities should supply this important information to their customers; first, by educating their employees so they are able to answer intelligently questions put to them; next, gas utilities could inform the public through the use of pamphlets or newspapers; and the gas meter manufacturers could contribute to this important cause by nation-wide magazine advertising. With the gas industry moving ahead in cooking, water heating, refrigeration and house heating, the prospective customer should know first that he receives full value from every cubic foot of gas registered on his gas meter.

This article would be incomplete if something were not said to prove the fact that a gas meter is accurate. While it may be true that some companies do not have so high a percentage of accuracy as others, the ultimate aim of every company is to bring that percentage up. To lay down a set rule of meter repair procedure that could be followed by all shops is quite impossible, due to the varying conditions in each locality. Each company must work out a system of repairing to fit the local conditions. Once this system is found, and the meters are inspected and maintained by competent help, they will undoubtedly register more accurately than most of the necessities commonly purchased for use today.

To prove that our gas meters are accurate, let us review briefly the summary of the annual report our Company sends to the Public Service Commission of Wisconsin. It must be known that the Public Service Commission is a regulatory body appointed by our elected representatives. This Commission governs and keeps check on the public utilities of the State. Among the many laws that gas utilities must live up to are the following: First, "The B.t.u. content of gas must be 520"; second, "Gas meters must test within the prescribed limits set by this Commission"; third, "A gas meter must be brought in for test every 48 months." Last year our Company brought in for routine test and various other reasons, 2,716 meters. Out of this number, 2,537 or 93% tested within the correct limits set by the Public Service Commission. Of the remaining 179 meters, 75 tested fast, 74 tested slow, and the remaining 30 were brought in stopped, D.R., damaged by fire, or other reasons.

The point the gas-consuming public should know is this: The average error of fast meters was 1.18% and the average error of slow meters was 1.33%. The net average error for 2,686 meters tested was 0.13% on the slow side. Under another ruling of the Public Service Commission, the utility must refund the customer for any meter testing faster than the prescribed limits set by law.

If the Company's employees fully understand these facts regarding the accuracy of gas meters, as well as the rulings of the Public Service Commission in regard to heat units in each cubic foot of gas, routine tests and accuracy limits allowed, they will be in a position to reply intelligently to complaints made by customers. Surely if the customer will listen with an open mind to the facts in the matter, he will see that he is getting more value per dollar through his gas meter than from almost any other commodity he uses.



Furthermore, our customers cannot believe that their meters are "set up" if they understand something of our meter accuracy and the strict regulation of the Public Service Commission. A great deal of doubt could be removed if more of the above facts were placed before the customers.

So, Gas Utility Employee, the next time you are asked, "Is A Gas Meter Accurate?" answer with an emphatic "Yes", and back it up with facts. Your gas customer can honestly be told that when he turns on the valve of any modern gas appliance, he is getting exactly what he wants in both volume and heat units, any time of the day or night; that he is receiving efficient, dependable and clean service, measured by a consistently accurate meter. How many of our customers appreciate the value of this service? Why should this service be questioned, and the questions allowed to go unanswered?

The ultimate aim of every gas company is to attain the highest possible meter accuracy. The aim of any system of meter handling should be a meter as nearly accurate as possible, even after being in service over a given number of years. Find that system of meter handling that fits the conditions of your locality, then consistently work toward the attainment of high meter accuracy.

The success of any business depends wholly upon the satisfactory reaction it gets from its customers. We know that our service is of the highest caliber. It is therefore our job to let the world know that our service is right. Our customers must be made to know that they are getting full value for every foot of gas measured by their gas meters. When this is done, surely a great advance will have been made toward permanent public good will.

Natural Gas and Motor Fuel

Natural gasoline recovered from natural gas is an important part of the national supply of motor fuel and is important in the manufacture of aviation gasoline. In 1918 the total production of this was 282,535,550 gallons. In 1939 the total reached 2,095,632,000 gallons, produced in the 620 plants in the oil fields of the United States.

Natural Gas for Lime Burning

Texas Plant Finds Kiln Capacity Increased by Fuel Change-over. Improved Temperature Control and a Cleaner Product Obtained.

By
T. J. Skrabanek,
Assistant to Chief Industrial Engineer,
Lone Star Gas Company

IN MID-TEXAS, where clean high-calcium Edwards limestone is plentiful, timber grows right up to your back-door, and lignite has been mined for decades, the manufacture of quicklime has been conducted on a big scale for many years.

But now there's a new trend! Texas lime producers have found that natural gas, used in their kilns in lieu of lignite or wood, brings all sorts of welcome advantages. First, the gas-burned lime is cleaner; and the flexibility and control of gas as over and against solid fuels permits the maintenance of more even calcining temperatures and the production of a more homogeneous, uniformly-burned product. Next, gas-firing does away with fuel-storage and ash-removal costs and inconveniences; allows the use of smaller "eyes" (unobstructed by solid fuel charges) so that radiation heat losses are minimized; makes it considerably easier to "break in" for a "fall"; and simplifies the all-important job of maintaining proper draft conditions through the kiln to flush out the carbon dioxide released in the calcining zone and preclude the slowing-up or actual reversal of the calcining reaction. But most important of all, natural gas firing increases kiln capacity as much as 45%.

A. B. Garner, Plant Superintendent, Austin White Lime Co., McNeil, Texas, states, "With lignite we could never draw over 10 tons per kiln per day; now with natural gas we can get 14½ tons. Before, we could only draw once every 4 hours but now, if necessary, we can draw every 3 hours. We can get more lime out of 3 kilns on gas than we can out of 4 on lignite or wood."

Products and Markets

At the Austin White plant there are four currently operating vertical shaft kilns, three of which have been converted to natural gas for well over a year. For some 50 years the organization has been making lime, and since 1909 has been making it on the present plant site. Today, under the guidance of A. H. and G. E. Robinson, sons of the founder, it is turning out high-calcium lime products for the building trades (mortar, plaster and concrete), cold-water paint and whitewash making, water softening, oil refinery uses (principally anti-corrosion and grease manufacturing), chemical enterprise of all sorts, sugar refining, paper mills (pulp cutting), and countless other applications. The production is sold in bulk or packaged in bags, barrels or drums—either as lump, crushed or pulverized quicklime, or hydrated lime. Batches may be soft-burned or hard-burned according to the needs of the user for quicker slaking or greater stability.

Above:—Looking down the incline shows worked strata of limestone in the background. Wood piled on right is used in one stack not yet converted to gas. At bottom of incline is load lugger ramp and dump-car train. Right:—Top of the incline showing four stacks now in operation.

Mining and Handling

Limestone is mined on the premises with air drills and dynamite by surface quarrying methods after the top soil has been stripped with a drag line. Mexican labor reduces the rock to kiln size (3 to 8 inches), hand-picks it, and loads it into the buckets of a load lugger. Thence it is driven to a ramp at the plant, dumped into 2-yard dump cars (each car-load calcining about 10 barrels of 200 pounds each), and drawn on 30-gauge track by cable up the incline to be charged into the kilns 52 feet above the draw floor.

At the moment new land is being cleared to expose a fresh stratum of fine limestone (remarkably free from silica, alumina, and iron)—and the timber is being utilized to fire the only one of the four kilns which, for this very reason, has not yet been converted to natural gas.

Kiln Operation

Charging starts at 7:00 a.m. and continues until the operating kilns are full, and, of course, firing is a constant 24-hour procedure. All kilns are cylindrical, cased in steel plate, and lined with 9 inches of fire-brick at the top. This refractory lining increases to 18 inches thickness at the "neck," 19 feet below the charging level, where the internal cross-section changes from round to rectangular (7½ by 5 feet) to form the high heat zone. At the base of this

heat zone and some five feet above the firing deck, two eyes, one on either side of the kiln, are constructed to provide four side openings (two per eye) 15 inches square by 40 inches long. With wood or lignite firing, eyes must be at least 7 feet long and much larger in cross-section. The net effects upon radiation heat losses and upon the facility of "poking," through shorter unobstructed eyes, to cause a fall is obvious.

The gas burners (six per kiln) run into the calcining zone at a level just below the break-in openings in the eyes, and consist of 1-inch pipe, capped and drilled for the proper orifice size, and inserted centrally in a 36″ length of 3″ pipe which extends to within 9 inches of the calcining-zone inside wall. The degree to which the gas-supply nozzle is thrust into the air-gas mixing chamber (which is the 3″ nipple) is adjustable, and helps to regulate the length and fatness of the long, lazy, luminous flame which works up through the charge and accomplishes the calcining. The amount of air inspirated by the gas before combustion is regulated both by the pressure of the gas (usually 2 pounds per square inch at maximum kiln capacity; 1¼ pounds per square inch at minimum operation) and by a shutter-flange which can be spun forward to close, to any desired degree, the air opening between the 1″ gas line and the 3″ pipe.

One set of two burners is especially arranged to burn in the center of the calcining zone rather than at the wall—to facilitate heating of the core of the charge and eliminate any slagging of the refractory walls by interaction with limestone. This is done by conducting the gas centrally along an 18″ square "cross-beam" of refractory which bridges the calcining zone just below the eye-level—and discharging it for combustion up through the top of the "cross-beam" right at the center of the kiln cross-section.

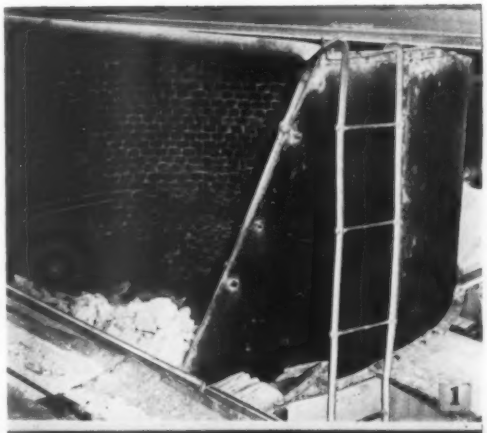
The calcining zone proper extends, it is estimated, about 2 to 2½ feet above the firing level. A temperature of 1350°F. to 2200°F. is maintained according to the degree of soft- or hard-burning required, and is checked every 15 minutes by thermocouples in the calcining zone connected to an Alnor 4-station indicating pyrometer. It is estimated that about 5500 to 6000 cubic feet of 1050 Btu. per cu. ft. natural gas are consumed per ton of quicklime produced.

Both because of the fact that natural gas contains no sulphur, and ample air drafts are easily regulated through eyes not clogged with burning wood or coal, gas-burned lime is cleaner and whiter than either wood- or lignite-fired material. Also, it is not necessary to employ forced draft, and the expense of operating a 50″ blower powered with a 20 hp. motor (previously used when forcing production with wood- and lignite-firing) is completely eliminated.

To get even whiter lime, another ingenious new stunt has been devised. In one kiln there is built a 1½ x 1½ x 1 foot water reservoir in each eye between the two break-in channels, and the steam developed from this water by the otherwise wasted heat in the eye refractories drifts up through the charge to accomplish a very noticeable bleaching action without the cost of steam equipment.

At each fall about twelve 300-pound wheel barrows full of calcined rock are broken down. Caution is exercised in not breaking down too much at one time and permitting unburned cores to fall into the conical steel-plate discharge hopper at the base of each kiln.

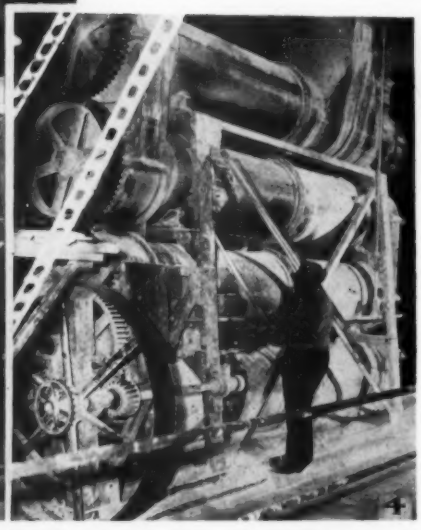
After each fall, the calcined rock is let stand in the hopper until just before the next fall at which time a draw of about fifteen 200-pound barrels is made through the shear draw-doors (see Figure 3) hand-operated by pinions and gear segments. Each draw is then dumped on the concrete floor of the plant where it cools for at least two hours before being inspected, and hammer-broken for the hand-picking of cores and such other extraneous material as may have carried through the kiln. Superintendent Garner's infallible hammer blows test, both by ring and fracture, each draw—to check for over and



1—Charging mouth of gas-fired kiln. There is absence of smoke which is characteristic of wood or lignite firing.

2—"Breaking-in" for a "fall". Note the small size of eye openings and shortness of eye.

3—Making a "draw" from the conical hopper into which the "fall" dropped. Twelve 300 lb. "wheels" are obtained per draw every three hours with gas fuel as against 4 hours previously.



4—The four drum continuous hydrator. Operator is checking the output.

under-burning and to classify and control hardness, softness, and whiteness. The weight of the finished lump quicklime, because of the moisture and carbon dioxide lost in calcining, represents about 37 per cent of the original weight of raw stone charged.

In all, a given piece of stone is in the kiln about 24 hours, taking about 17 hours for it to work down through the preheating zones into the heart of the white hot calcining throat.

Product Handling

If the product is not shipped as lump bulk quicklime, many things may be done to it before sale. It travels by conveyor belt to a shaker screen where surface impurities are removed and separated, and thence to the crusher where it is reduced to about ½" size. An enclosed bucket elevator lifts it to the top of the plant and discharges it into a long trough fitted with a screw conveyor from which it may be routed three ways by opening various combinations of gates. It may go to the pulverizer and be screened and bagged as pulverized quicklime; it may be packed in barrels or drums as crushed quicklime; or it may travel through a fan and cyclone separator and be caught as finely divided air-floated lime for bagging.

In recent years there has been a growing demand for pulverized quicklime, which is finely ground (300 mesh) and air separated so as to require less aging time after slaking and before application.

Hydrated lime is manufactured in a four-drum continuous hydrator (see Figure 4). Entering at one end of the topmost drum (12' long by 22" dia.), crushed quicklime is showered with water sprayed through jets at carefully controlled rates, and the slaking process continues slowly as the charge is agitated and worked along the drums in series by screw blades disposed about a longitudinal shaft in each drum.

Gas Fuel Economies

With respect to the economics of natural gas firing at this plant, it is reported that, in addition to all the speed and product-improvement advantages noted above, the fuel cost per pound of saleable quicklime is actually the same or even lower than that of wood or lignite firing. The savings in draft-fan power have been mentioned. Further, the costs of coal handling are eliminated. And the actual monetary savings in time, labor, space, and plant arrangement, need no elaboration.

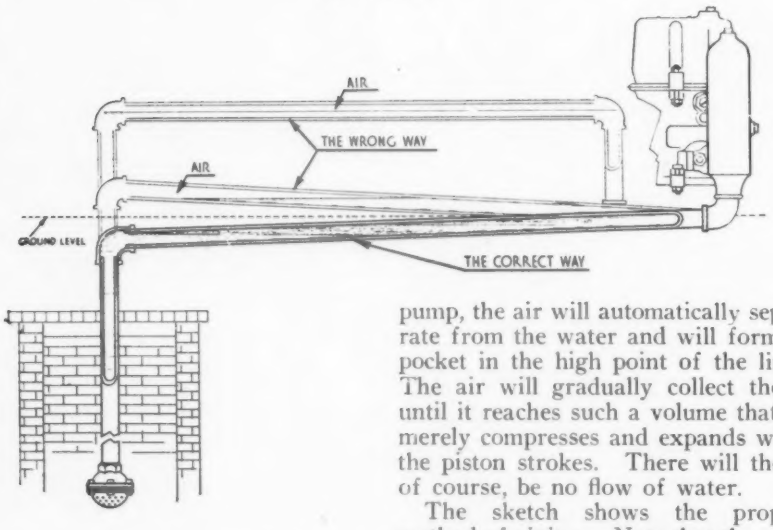
The cooperation of the Lone Star Gas Company has had a great deal to do in making possible this advanced lime-burning technique at Austin White—both through engineering counsel and the running of five additional miles of gas supply line to the plant from the previous southern extremity of the pipe line system at Round Rock, Texas.

Installing Suction Pump Piping

By

W. F. Schaphorst, M.E.

Newark, N. J.



The diagram shows an important detail that should be borne in mind when installing any kind of pump. Or, in the event that your pump is giving trouble incorrect piping installation details such as shown here may be the reason why.

Usually a small amount of air is present in all water hence if any point in the suction piping (from well to pump) is higher than the level of the pump, the air will automatically separate from the water and will form a pocket in the high point of the line. The air will gradually collect there until it reaches such a volume that it merely compresses and expands with the piston strokes. There will then, of course, be no flow of water.

The sketch shows the proper method of piping. Note that the suction line should be laid with a gradual slope from the pump to the water supply. The slope of the pipe should be at least 1 inch to each 15 feet.

Just above the proper piping method the wrong way is indicated by means of lighter lines. If suction piping is installed in this manner the air will collect along the top of the horizontal pipe as shown. If, for any reason, you are forced to use such a method of piping be sure to use a tee and plug instead of the first elbow. You can then release the accumulated air when necessary. Also above the proper piping method another wrong method is shown. Notice that the elbow leading to well is slightly higher than the pump cylinder. Notice how the air collects at that high point.

Careful attention to this diagram while installing suction piping will save time and trouble. The suction line must be air-tight. Special care must be taken to lead or paint all joints to guard against leaks. If the suction line leaks, the pump will not work.

An "almost horizontal" suction line is practical up to 1000 feet, but great care must be taken to gradually slope it from the pump to the well. The longer the suction line, the greater the strain on the suction valves in the pump. On suction lines over 100 feet in length it is essential to use an extra vacuum chamber to relieve the suction valves and also to guard against water hammer.

Coal Research and Technology

Technical Paper No. 613 of U. S. Dept. of the Interior, Bureau of Mines covers developments in coal research and technology in 1937 and '38.

Edited by Arno C. Fieldner, this report of 96 pages with numerous references may be secured by addressing the Superintendent of Documents, Washington, D. C. The price is ten cents a copy.

Fink Main Joint Tester *

Constructed
By
Members of the Distribution Department
Michigan Consolidated Gas Co.
Detroit District

THE testing of joints on most new main construction work is usually a simple matter because the jobs are relatively short extensions of small diameter pipe. Such testing is generally done by applying 50 pounds internal air pressure to the entire pipe installation before backfilling around the joints and, of course, before the tie-in is made, and then applying soap suds to the joints. Longer jobs are tested in a similar manner but in sections so that backfilling operations are not delayed.

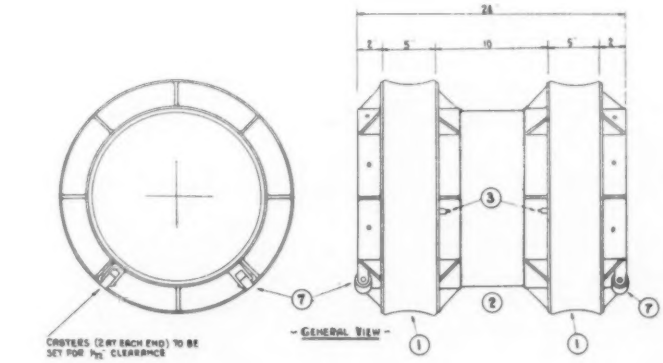
Faced with the preparation of specifications for the testing of joints on approximately seven miles of 22″ steel main, the joints to be tested at 100 pounds pressure, the Company engineers soon decided that the usual test procedure would be too slow, would cause construction delays, and that the cost would be excessive. A number of alternatives to the usual method of testing were discussed, none of them looked very promising. The idea of leaving the testing until after gas was in the main and then use a combustible gas detector at needle bar holes over every joint was also considered but not accepted. Assistant General Manager, Mr. Henry Fink, presented the idea which was almost immediately adopted and developed into a workable and very satisfactory means of testing the joints.

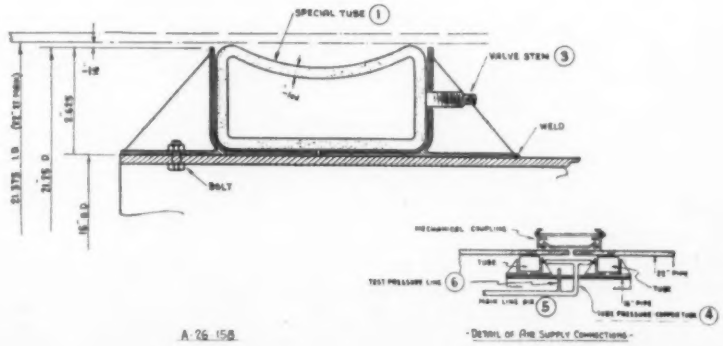
The idea was to test each joint individually immediately after assembly by subjecting it alone to the test pressure. This called for a chamber which could be inserted into the open end of the pipe, pushed into place inside the pipe at the joint, and filled with air to 100 pounds pressure. The major problems involved in the construction of such a chamber were to provide a satisfactory seal for the chamber and at the same time to have sufficient clearance for the tester to pass joints which had been constructed with a four degree maximum deflection of the pipe. The U. S. Rubber Company's Tire Engineering and Service Department was consulted on the type of seal and they suggested the fabrication of special rubber tubes which would be molded to such a shape that when deflated they would withdraw from contact with the inside of the pipe and could be inflated from the same air line supplying the chamber.

The tester consists of a 24″ length of 16″ steel tubing used for the chassis on which the rubber tubes, etc., are mounted. The rubber tubes (1), see drawing No. A-26-158 attached, are mounted in 5″ wide reinforced rectangular channels around the circumference of the 16″ steel tube, two inches from each end, forming an annular chamber (2) between the two rubber tubes that is approximately 10″ wide and about 2⅝″ deep. The tubes are approximately rectangular in shape, five inches across and about 2⅝″ deep. The valve stems (3) of the rubber tubes are on the side and the tubes are mounted so the stems protrude through holes on the inner side of the channels into the chamber between the tubes. The valve stems of the two tubes are connected by copper tubing (4) to the main air manifold (5) which is a ¾″ pipe through the axis of the 16″ steel tube chassis. The annular test chamber is also supplied from this manifold through a separate line (6) containing an orifice which is considerably smaller than the lines to the rubber tubes. Thus the pressure in the tubes builds up more rapidly than in the chamber, allowing the tubes to seal the chamber before the pressure in the chamber reaches a maximum of about 100 pounds.

The ¾″ air manifold through the axis of the 16″ steel tube chassis is supported at each end by a steel bar welded across the open ends of the tube. Coupled to this manifold is a piece of ¾″ pipe of such a length that the distance from the center of the test chamber to the end of the ¾″ pipe is 10 feet. Two additional lengths of ¾″ pipe, one 10 and the other 20 feet long, are supplied with the tester so that the tester may be used on varying lengths of 22″ pipe up to 40 feet without too long a length of ¾″ pipe extending from the open end of the 22″ pipe.

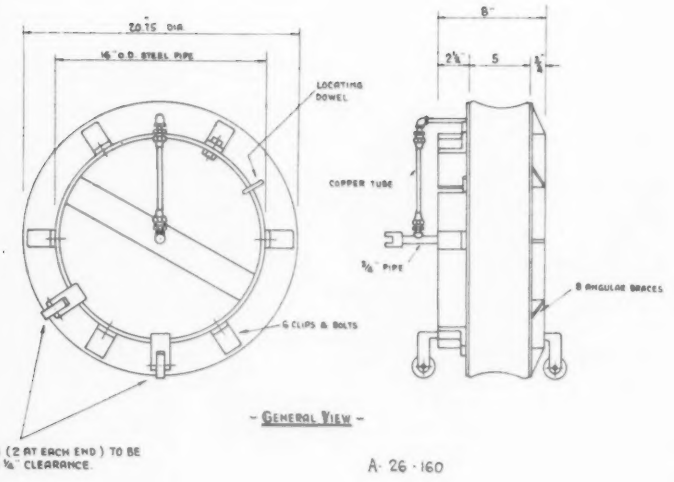
The tester is supported and moves inside the 22″ pipe on four small





A-26-158

* Paper Presented at Annual Meeting Michigan Gas Association, Mackinac Island, July 8-10, 1940. Paper read by Geo. L. Sawyer.



steel wheels (7) which allow a clearance of about 1/32" between the bottom of the pipe and the channels which confine the rubber tubes.

In actual practice the tester is used as follows:

(a) first, assume that the tester is in position inside the main under the last joint tested, with the ¾" pipe connection to the tester extending to the open end of the last length of 22" pipe installed.

(b) as the next length of pipe is brought into position for coupling, a fitter in the ditch at the end of the last length laid takes hold of the ¾" pipe to the tester, inserts it in the end of the length being brought into place, and hand over hand pulls the tester to within a foot or two of the open end of the last length laid, at the same time pushing the ¾" pipe through the length being installed.

(c) after the new length is jointed and coupled, a fitter reaches into the open end of the main, takes hold of the ¾" pipe and pulls the tester into position under the new joint. Accurately measured marks on the ¾" pipe insure correct location of the tester.

(d) a pressure gauge and air line to a compressor is then connected to the ¾" pipe. The rubber tubes and test chamber fill with air to 100 pounds pressure very rapidly.

(e) while this pressure is maintained in the test chamber the Dresser coupling is thoroughly checked with soap suds for any evidence of leaks.

For testing the joints on 22°, 45°, and 90° bends it was necessary to make a somewhat different sort of tester—see drawing No. A-26-160. This tester consists of a single rubber tube mounted in a reinforced rectangular channel around the circumference of a short piece of 16" steel pipe and supplied with an air connection and wheels similar to the other tester. The shortness of this tester about 8" in length, allows it to be pushed or pulled through all fittings. The application of this tester differs from the other in that the tube is centered and inflated directly under the joint being tested while another air line supplies air through a hole tapped from the outside in the middle ring of the Dresser coupling, to the seal space between the coupling gaskets, middle ring, pipe and inflated tester. Soap suds are then applied to the Dresser coupling to test for leaks.

Housing Survey Shows 95% Use Gas For Cooking

Ninety-five per cent of all dwelling units inspected during a recently completed housing survey conducted by the City Housing Authority of Los Angeles used gas for cooking purposes. The survey, conducted to determine the need for low-cost housing, was confined to a district embracing 20 percent of the city's area, which included approximately one-half of the total dwelling units in the city.

Of the total of 250,061 surveyed dwelling units in the form of detached single dwellings, flats and apartment houses having a total population of 676,943 persons, 237,928 dwelling units, or 95.1 per cent, were found to be using gas as the fuel for cooking. Electrical cooking facilities were found in 3,417 dwelling units, 1.4 per cent. There were 68,385 owner-occupied dwelling units included in the survey. Of this number, 65,509 (95.8%) used gas for cooking.

COOKING EQUIPMENT SURVEY	*All Dwelling Units*	%	*Owner Occupied Units*	%	*Tenant Occupied Units*	%	*Vacant Units*	%
Total reported on:	250,061	...	68,385	...	167,712	...	13,969	...
Gas	237,928	95.1	65,509	95.5	159,861	95.3	12,558	89.9
Electrical	3,417	1.4	2,134	3.1	1,206	0.7	77	0.6
Other installed	1,334	3.0	362	0.5	879	0.5	75	0.5
None installed	7,382	3.0	380	0.6	5,766	3.5	1,254	9.0
REFRIGERATION:	250,010	...	68,375	...	167,703	...	13,932	...
Gas	9,434	3.8	5,269	7.7	4,056	2.4	109	0.8
Electrical	104,576	41.8	37,558	55.5	64,030	38.2	3,988	28.1
Ice	89,096	35.6	20,909	30.6	75,069	38.8	3,119	22.4
No refrigeration	46,905	18.8	5,540	8.2	34,548	20.6	6,716	48.2

A total of 250,010 dwelling units were included in the refrigeration survey. Of this number, 114,010 used different forms of mechanical refrigeration. Of the total dwellings surveyed, 9,434 (3.8%) used gas refrigeration. A significant disclosure was that in owner-occupied dwelling units the use of gas refrigeration was more than double that used in tenant-occupied dwelling units. The following table shows the various facilities used in the dwellings embraced in the survey.

Gas Appliance Sales Register Marked Increase

Gas appliance sales throughout the United States increased substantially during the first five months of this year as compared to sales figures for the same period of 1939.

Gas-fired furnaces (house heating equipment) registered an increase of 33.8 per cent during the period of from January through May of this year as compared to 1939.

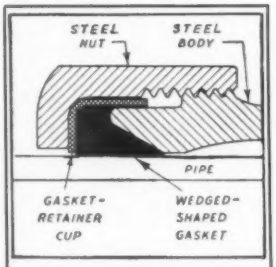
During this same period gas range sales rose 14.1 per cent and gas water heater sales were up 13.6 per cent.

MORE AND MORE GAS MEN JOIN THE SWING TO

NO THREADS UNDERGROUND

★ ★ ★

. . . now standardize on Dresser SUPER SERVICE Fittings for service-line work



Above: This longitudinal view through one end of Dresser threadless SUPER SERVICE Coupling shows how it joins *plain-end* pipe in a flexible, permanently gas-tight connection. Working principle is same as that proved for 50 years in Dresser Bolted Couplings, Style 38.

More and more gas men today are saying: "I don't want threads underground." These men are fast banishing thread troubles—one major cause of service-line leaks—by using more and more Dresser SUPER SERVICE Fittings. Many are now installing these threadless Fittings from main to meter.

EXTRA PROTECTION UNDERGROUND! Dresser SUPER SERVICE Fittings actually give you a *reinforced* connection—instead of one that is weakened 40% by threading. With all Dresser SUPER SERVICE Fittings (couplings, ells, and tees), you are assured of wall thickness throughout equal to or greater than that of the pipe, *plus* FULL pipe thickness, too!

FLEXIBILITY FURTHER REDUCES FAILURES. Another big percentage of leaks is eliminated by the *flexibility* of these rubber-packed Fittings, which harmlessly *absorb* normal pipe movements . . . stop failures caused by frost-heave, expansion, contraction, traffic vibration, or soil movements.

SIMPLICITY AMAZES CREWS. Street men who have discovered how much *easier* their service work becomes with these simple Fittings are loath to go back to threading and its precise lining up of pipe, exact pipe lengths, and work starting threads.

OTHER ADVANTAGES TOO: (1) speedy assembly on services out of line; (2) work speeded up especially on reconnections, renewals, cut-ins, repairs; (3) generous, *wedge-shaped* gaskets and ample "take-up" of nut give *reserve* sealing power and permanent gas-tightness—even on *corroded* pipe; (4) "stab" fit eliminates need for disassembly before installation; (5) exclusive, *cup-shaped* gasket-retainer ring centers itself on, and *completely* confines gasket, preventing nut from fouling on gasket; (6) ruggedly constructed throughout; (7) coarse, easy-starting threads can't strip; (8) anyone can install, using only a wrench, in wet ditches or bad weather, with complete safety; (9) union type, economical joint, easily salvaged, is afforded.

If you would like to know how others are using these handy SUPER SERVICE Fittings, write us. The right combination will save you time, trouble, money. *We help gas men solve service-line problems!* Dresser Manufacturing Company, Bradford, Pa.

SUPER SERVICE Fittings, Style 90: Regular Coupling (5" body); Long Coupling (10" body); 45° Regular Ell; 90° Regular Ell; Plain-end 90° Street Ell; Threaded-end 90° Street Ell; Street Tee. Sizes: ¾" ID to 2" ID, inclusive.

Dresser SUPER SERVICE Fittings

Gay Nineties Week Boosts Gas Stock

By
Fred E. Kunkel

ONE OF THE BIGGEST crowds of people ever assembled in Nashville, Tenn., turned out to witness the Gay Nineties Fete of Sixth Avenue merchants in that city, sponsored by them but originated by the Nashville Gas Heating Company. All the stores, including the gas company, decorated their windows Gay 90 fashion. The gas company had an old kitchen in one window display and a modern kitchen in the other.

"The electric power company had a big cooking school at the War Memorial Building, spending some $15,000 in advertising, and we had no way of combating it," explained Wm. E. Leverette, general sales manager. "The idea grew out of the fact that so much interest was aroused in this old kitchen and so many people stopped to look at it, that we got the idea of having a Gay 90 Review.

"We thought it would be a good idea for the Sixth Avenue Merchants Association to sponsor it jointly. It was all done to create traffic on our street to offset the traffic the electric people had at that show. They had a ball and a high powered orchestra, which did not draw the crowd we had at the Gay 90's street dance. And it was something unusual in that we utilized the local merchants on the street.

"We had three parades, (1) a parade of all Gay 90's costumes, worn largely by store employees. Farley happened to be in town and he rode in the carriage with me in this parade, which made an added feature. (2) A parade of old vehicles and carriages, and the first type of automobiles ever built; (3) a contest for the best costumes in the parade. We had the ball the last night which was a street dance.

"Policemen on this street all wore the old fashioned police uniforms of the 90's during that week. The policemen were really funny all week, and attracted a good deal of attention, crowds standing on the corners to watch them.

"Tandem and high wheel bicycles were on the street all the time. It was strictly a pageant idea, but we kept the traffic on Sixth Avenue only. The other streets were practically deserted. The newspapers gave it tremendous publicity.

"The affair started on a Monday and ran through to Saturday, with a whole week of pageantry. During that week we had 75,000 people on this street. It was so packed at times that you couldn't see the street. They were on tops of buildings and sitting on windows. We had a band on the street all the week playing Gay 90's music. Members of the band also were in old fashioned costumes.

"Where we benefited greatest was by putting on this contest. To summarize: Monday we had these people on the street all the time, people walking around in costumes or riding bicycles, and at five o'clock the parade; Tuesday at two o'clock we had a parade of vehicles, horses and carriages; and old automobiles. Wednesday and Thursday we had nothing but costumes and bicycles. Friday at two o'clock we had the costume parade and prize contest. Friday night we had the ball.

"People who had seen pageants all over the country proclaimed that from the standpoint of a novel pageant it was the greatest thing they ever saw. And for a one block affair it was the most successful, it all being staged between Union and Church streets on Sixth Avenue.

"We capitalized on the thing by putting on our own individual contest to get people into the store, primarily to create traffic rather than get business. We ran continuous demonstrations all the time . . . all kinds of baking, roasting, vegetable cooking . . . everything in the cooking line. We broiled at one time, baked or roasted at another time . . . all day we had something going on.

"Every one who came into the store received an eight page booklet, 9 x 12, offering $1000 in prizes. They were to take the booklet home and review each page carefully, having in mind the points they liked best

THEN and NOW:—These window displays offered a striking contrast of the kitchen in the "gay nineties" compared with the modern all-gas kitchen. Note the ornate range of a half century ago and the smooth outline of the modern equipment on the right.

It can squash a cannon ball

...or crack an egg!

THE SECRET ? CONTROL

So sensitive are the controls of the giant power hammer that it can strike with the gentleness of falling rain—or the kick of a thousand mules!

The secret of the Harper Burner System's success is more efficient heat *control*. It has taken the guesswork out of top-burner cooking—the result of its accuracy and flexibility of operation is to convince the public that *gas*, today, is even more the ideal cooking fuel.

r. 1940, Harper-Wyman Co.

CONTROL *is the secret here, too*

● The Harper Burner System is a patented invention whereby each of the burners on the range is actually 2 burners in 1 . . . a burner within a burner . . . both operated and controlled by a single handle.

This arrangement affords a high-speed STARTING BURNER to *start* foods boiling and for fast frying . . . plus a small, central, economical COOKING BURNER for *maintaining* the cooking. The COOKING BURNER can be used entirely independently of the STARTING BURNER. No other top burner possesses this vital advantage — which insures easy, accurate control: just the right heat for every type of top burner cooking . . . every time.

HARPER-WYMAN COMPANY
8562 Vincennes Avenue, Chicago, Ill.

HARPER BURNER SYSTEM

HARPER BURNER SYSTEM

Demonstrates GAS at its best

SEE OTHER SIDE OF THIS PAGE

Recipe for cooler kitchens...

THE HARPER BURNER SYSTEM

THE HARPER BURNER SYSTEM brought new physical comfort into the kitchen—made possible a much cooler room for the housewife to work in on stifling hot summer days.

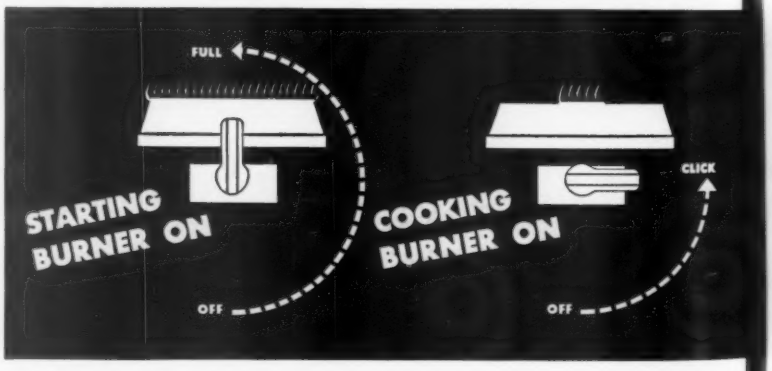
The modern insulated oven was a great step forward in this direction. But the Harper Burner System makes more difference than even the best insulated oven. Top burners are used for preparing every meal, while the oven is used only occasionally.

The ordinary top burner wastes heat, releases it into the kitchen, making it hot and uncomfortable.

Tests have been made where the Harper Burner System was compared with ordinary top burners, and the same kitchens under the same conditions *stayed as much as 9 degrees cooler.*

The reason, of course, is the Harper COOKING BURNER. It centers the heat *under* the vessel in which food is being cooked. Its accurate *control* makes possible using just the right amount of heat—no more. It maintains the cooking without overheating the kitchen with wasted gas.

The Harper Burner System provides a burner within a burner. The diagram below shows how the COOKING BURNER operates entirely independently of the STARTING BURNER. Yet both are controlled by the same handle.



We shall be glad to send you, without cost, two booklets that tell the complete Harper Burner System story . . . "Modern Methods of Top Burner Cooking" and "The Greatest Cooking Discovery in 40 Years". They should be valuable to anyone interested in the promotion of gas cooking and gas appliances. *Harper-Wyman Company, 8562 Vincennes Avenue, Chicago.*

SEE OTHER SIDE OF THIS PAGE

HARPER BURNER SYSTEM

Bedecked in raiment that could be both seen and heard, these gay gentlemen, equipped with handle-bar mustachios, paraded with their ladies in the Nashville pageant. All are employees of Nashville Gas and Heating Co.

about gas service. Then they were to write a short letter not over 100 words on 'Why I Prefer Gas,' which had to be submitted within a week after the Gay 90's affair ended. The contestant had to reside on gas mains served by the company. The prizes offered ran the gamut of a gas refrigerator; a broiler range; a gas range with new Peasant pottery grill; a range with barbecue broiler; a range with high broiler; an automatic hot water heater and 100 George Rector's famous cook books.

"The inside of the booklet was replete with illustrations and enough wordage to describe briefly each picture. For example, page 1 had 13 illustrations, was headed 'Cooking with Gas' and told the story about baking potatoes, boiling cabbage or spinach, melting chocolate, serving perfect coffee, preparing spaghetti, frying potatoes, cooking a whole meal in one utensil, candy making, soup as you like it, hot cereals, hot tea, egg omelet, etc.

"The second page had 13 illustrations and was headed 'Artistry in Oven Performance,' telling about baking fruit cake, four layer cake, whole oven meal, oven canning, baking custards, potatoes, roasting turkey, baking fish, making delicious cookies, bread, baking powder biscuits and low temperature roasting.

"The third page contained 11 illustrations and was headed 'The Finest Foods Are Grilled or Broiled,' telling the story of broiling fish, bacon and sausage, steaks, browning meringues, making a whole broiler meal, crisp toast, toasted sandwiches, hors d'oeuvres and appetizers, broiling chops, etc.

"The fourth page showed the picture of the old and modern kitchen, and was a reproduction of the window display. The fifth page showed five photos of institutions which selected gas, and the remaining pages were devoted to gas refrigeration, automatic hot water heat, etc.

"The cost of putting on the Gay Nineties Revue was very low, the cost to us being only about 10% of that to put on the electrical show, and ours was far more effective. I am chairman of the Sixth Avenue Merchants Association, and we decided to capitalize on the idea jointly, so that we would all get the benefit of it. The stores had more than 100 employees in costume, more than a half dozen old bicycles and four automobiles, and numerous carriages including a coach and four not seen for many years on a local street. The interest in the prize parades was beyond expectations. Some beautiful costumes, dating back to the 90's were unearthed from attics and proudly exhibited for this occasion. Most of them were actually worn by the descendants of the original owners. The carriage shown in the photo was brought to this country in the seventeen hundreds. The coach and four was brought up from Gallatin, Tenn., by Mrs. F. C. Dibble just to be in the parade. It is an old hunting coach. Our pro rata share of the whole expense was $200, each firm contributing an equal share.

"We had flowers on all lamp posts and the formal opening of the street took place after we put up the flower boxes. A public address system was installed the length of the block.

"We have continued to show gains here in Nashville despite T.V.A. and in the last six years we have gained about 2700 new customers."

Wins Honorable Mention for Utility Advertising

Gussie O. Jones, advertising manager for the Atlanta Gas Light Company and its affiliated properties has received honorable mention in connection with the Josephine Snapp annual award for outstanding work by women in the advertising field.

Miss Jones, who is the first Southern winner of honorable mention, is a native of Elberton, Ga., and a graduate of Anderson College, Anderson, S. C.

For the past ten years she has been with the Atlanta Gas Light Company and its affiliated utilities, prior to 1939 as assistant to the Public Relations and Advertising Manager.

The Josephine Snapp Award and honorable mentions are made annually by the Women's Advertising Club of Chicago in memory of Josephine Snapp, a former president of the organization, and come as a very real honor to women engaged in advertising work.

New Ready Reference List For Pipe Fittings

A new and revised 20-page Ready Reference List Price Table covering the complete line of Square "Gee" pipe fittings has just been published by The Grabler Manufacturing Company, Cleveland, Ohio.

The entire book has been designed to facilitate quick and accurate reference to its contents.

In addition there are 5 full pages of such helpful data as standard weights and dimensions of fittings and pipe in various types and metals, supplemented by line illustrations.

UNIVERSAL Rawson ★

A COAL-WOOD KITCHEN HEATER RANGE THAT EMPHASIZES THE BASIC ADVANTAGES OF GAS AS THE IDEAL COOKING FUEL..!

● The new Rawson Universal coal-wood kitchen heater gas range focuses attention on the proved superiority of gas for all cooking purposes by reason of the advanced devices incorporated in the range, such as Simmer-Save Burners, Draftless Precision Oven, and In-A-Drawer Broiler with Savory Smoke-proof Broiler Grid.

The coal-wood heatinq section is so designed that it can be easily converted to the use of oil as fuel.

The Rawson is distinctly modern from a design standpoint and in addition, offers outstanding value per dollar of cost. There exists in many communities a substantial market for the sale of kitchen heater ranges, and the Rawson is the ideal unit for the gas company to feature as it not only gives superior performance from a heating viewpoint, but also assures a new and higher standard of cooking performance in top-burner, broiling and oven cooking.

BEACON Universal

WITH GAS KITCHEN HEATING UNIT

The Beacon Universal gives the same assurance of outstanding service and cooking performance as does the Rawson Universal. The Beacon, however, is a straight gas consumming appliance in that it utilizes gas for cooking as well as for heating. The gas kitchen heating unit has been engineered to assure utmost efficiency and economy of operation, and is equipped with full automatic devices to give an automatic gas kitchen heating service.

Universal GAS RANGES

MANUFACTURED BY CRIBBEN & SEXTON CO.
700 N. SACRAMENTO BLVD., CHICAGO, ILLINOIS

The Selling Parade

A Digest of Successful Selling Ideas

By
Charles B. Roth

WILLIAM FEATHER, the Cleveland business writer, tells about a man he knew who was a fine amateur boxer, really a champion. The trouble is, he didn't leave his boxing days behind him when he went into business. He still thinks he's a boxer, and whenever he's crossed, or insulted, he immediately proceeds to lead with his left and to cross with his right.

This man's business is salesmanship, but he spends most of his time looking for jobs. He can't hold one more than a few months until he punches the boss or some important customer—and then it's all off with him, of course.

I can sympathize with that man. There have been many times in my own experience when I'd have liked nothing better than to bounce one off the jaw of an unruly customer or an insulting prospect. But I have refrained up to this point, and I hope you have.

Still, what should a salesman do when he is insulted?

The best advice I can give you is this: If the insult is merely a slight or some little show of meanness on the part of the customer, forget it. Overlook it. Don't hear his nasty remarks. Take your medicine. Take little insults and kicks in your stride, and keep on calling. After a while he'll get tired of being mean to you and will begin to buy.

If the insult is one which you think should be called a major infraction of the rules of courtesy, one you can't very well overlook or ignore, there is a very subtle and effective way to handle it. A New Jersey sales executive taught it to me. He said:

"When a man insults you, look him in the eye long enough to unpoise him. Then quietly ask him to repeat the insult."

"You mean if he calls me a name I'm to ask him to repeat it?"

"That's it."

"I can't do that."

"Why can't you?"

"Think of my pride."

"Forget your pride."

"I can't."

"You can."

"I can't do it."

"You'll have to if you want to sell."

"All right. Then what?"

"Why, ask him to repeat the remark. Say something like this: 'Will you please enlarge on that remark? I am not sure I heard you correctly.' The chances are he will withdraw the remark and apologize. I have seen few men who wouldn't."

I tried it. It works. Ever since then I have not been afraid of insults. This little secret has given me the upper hand.

* * *

ONCE I HEARD Albert J. Beveridge give his famous speech on how to make a speech. The man was a master, and this was his masterpiece. I doubt if I will ever again have the opportunity of hearing such faultless reasoning and magnificent delivery. Though it has been twenty years, I believe I could reproduce three-fourths of what he said.

But the thing I remember best about it is the message Senator Beveridge intended to make. His theme was this: *Whoever wants to impress others, to convince others, to influence them to do his bidding must strike at once and maintain forever a positive attitude.*

This theme he proved by example. He cited Paul's Message to the Athenians, Christ's Sermon on the Mount, the address of other great men of the world, religious leaders, statesmen. Not one of these leaders permitted doubt to pervade his words or shade his meanings. He was positive he was right. He said so in positive terms. And because we all respect and admire and follow a leader, a positive leader, we listen, agree, believe, act when the positive leader speaks.

If you have been wondering why I am talking so much about a speech I heard twenty years ago when I should be telling you something about salesmanship, be patient a minute, for here is the point I am trying to make:

A salesman to sell must also be positive — not occasionally — but always and forever. In his mind there should be no doubt about the quality of his goods, the integrity of his firm, his ability as a salesman or the ability of the buyer to buy.

Every word he says, every gesture he uses, must be aimed at one thing: *Positiveness.*

If you doubt, the customer will doubt; if you vacillate, so will he; if you ponder, he will ponder; if you are weak, your case will have a weak effect. But if you are positive, if you know, if you are sure of yourself,—you'll sell.

* * *

PERHAPS THERE ISN'T any place east of Hollywood for yes-men, but wise Professor Overstreet believes there is. He believes there is a big place for them—in salesmanship!

Salesmen should try to make a yes-man of every buyer, he believes, because: "When a person says no, all his pride of personality demands that he remain consistent with himself. Once having said a thing he must stick to it. Hence it is of the very greatest importance that we start a person in the affirmative direction."

In other words—get 'em to say *yes* to you as often as you can in the sale, that they may still be saying *yes* when you ask them for the order.

* * *

WHO IS THE WORLD'S greatest salesman? We spent our lunch

hour arguing that point. We didn't agree, of course. We didn't expect to. But we separated friends, and that afternoon about four o'clock I received a note from one of the men, sent by messenger. It read:

"We are all wrong in our selection of the greatest salesman. I have just read an article by a British business writer nominating King C. Gillette, the safety razor inventor, to that office. It has convinced me. This is what the writer said: 'Gillette was a man who put IDEAS first, and he had large ideas. He created an IDEA. He shaped the IDEA into a FACT; and then he sold the FACT to the clean-shaven men of the world. That is why I call him the greatest SALESMAN.'"

Interesting things about Gillette: He tried for seven years before he sold even one safety razor. It took him five years to give one away. It was nine years before he was selling them in any volume at all. Then the tide turned. He became successful. He was 49 when it happened.

I believe I'm convinced that King C. Gillette does rank high among the world's greatest salesmen.

* * *

THOSE TWO GENIAL INSTRUCTORS of American business, Kenneth M. Goode and Zenn Kauffman, wrote a convincing book about the use of showmanship in business. It is my hope that someday they may write about the showmanship of salesmanship. That book would quickly become a best seller.

The best salesmen are those who are also the best showmen, and the man who is born with a leaning toward showmanship, is almost certain to make a success in selling.

A hard-bitten old fellow in Kansas City, owner of one of the largest retail furniture stores, told me that

he had recently taken on a new line of floor covering, after having sold an old line for nearly forty years. I asked why he changed. Because the salesmanship of the salesman representing the new line was absolutely irresistible, he explained.

"What did he do that was so persuasive?" I asked.

"Well, everything he did was persuasive," I was told. "But the thing that impressed me most was a little thing. He had his shoes soled with the linoleum he sold. He came in to see me, lifted up a foot, asked me to look at his shoe soles. He told me when he had put them on. He carried a pedometer, and it registered the miles he had covered on those soles. Well, it was so unusual to sell linoleum in this way that I bought."

You see, showmanship is the most effective way in the world to make ideas memorable and believable—both of which are vital in selling.

* * *

IT ISN'T NECESSARY for a salesman to become a profound philosophical thinker, because if he ever does become one he won't have time to sell. Thinking is a full-time job. But I do believe that a few minutes spent each day in trying to ferret out some of the verities of life will give a man a better idea of his job; hence, enable him to do it better.

So at the risk of being tiresome and not bright, I want to spend a few minutes talking about value, desire and price—the three factors with which you are concerned every day.

Value is determined almost entirely by desire. You desire something greatly. It is valuable to you. You desire it not at all. It has no value to you whatever.

John C. Van Dyke, fine man, fine writer, fine thinker, broke down in health many years ago, and went alone to the Mojave Desert to recuperate. The Indians, who liked him, thought he would be like other white men, crazy about gold. So as a favor one of them took him to a hidden gold mine; one fabulously rich. Van Dyke was not interested in gold. He looked curiously at the mine, but didn't make note of its location, and promptly forgot it. It had no value to him, but to most men it would have been the thing of most value.

A drowning man would have no desire whatever for diamonds, but would trade a peck of them for a life preserver. You see, the life preserver would be ever so much more valuable than diamonds.

Now, price is dependent upon value. If people don't want a thing, the seller can't get any price for it. Take field stones. How much would you pay for a hundred pounds of ordinary field stones? Nothing probably. But Lafcadio Hearn wrote from Japan that many Japanese men of wealth would bid fabulous prices for unusual stones picked up in the field. For them those stones had value. They vied with one another in buying stones. Therefore the price of stones shot up.

Maybe from these little random thoughts you will get an idea that applies directly to your business. I hope you do.

SUPERIOR GAS METERS

For Sound Values and Continuous Operating Economy

Meters for Domestic and Industrial Use. All Sizes 5B to 60C.
Wet Test and Demonstration Meters — Diaphragms —
Service Cleaners — Provers — Meter Repairs

Superior Meters are built to A. G. A. Specifications to provide complete protection against leaks and costly repairs. Write for details and quotations.

SUPERIOR METER COMPANY, INC.

167 41st Street *Brooklyn, N. Y.*

REPUBLIC GRADIENT-HEET

A NEW GADGET?

NO!! A NEW PRINCIPLE

OF HOME-HEATING IN WHICH "STOP AND GO" IS ELIMINATED IN FAVOR OF CONTINUOUS HEAT INPUT

THE MOST IMPORTANT DEVELOPMENT

IN HEATING SINCE THE ADVENT OF THE THERMOSTAT

DON'T PENALIZE A MODERN FUEL WITH

ANCIENT METHODS OF APPLICATION

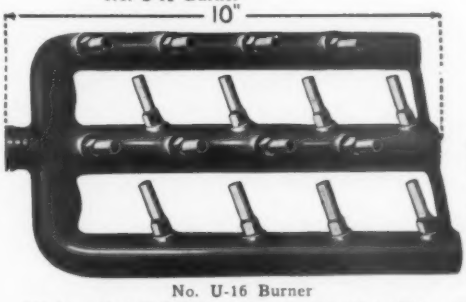
REMEMBER—"STOP AND GO" HEATING HAS "STOPPED AND GONE"

AUTOGAS COMPANY

2240 DIVERSEY CHICAGO, ILL.

BARBER BURNERS
for ALL Gas Appliances

No. S-15 Burner



No. U-16 Burner

The largest selection of Burner Units on the Market. The Barber way is to adapt the Burner to the Appliance. Your problem is our problem—let us help you!

● Efficiency! Economy! Performance! on Natural, Artificial, or Butane Gas ●

Send for Catalog 38A—showing all types of Appliance Burners, Conversion Burners, and Pressure Regulators.

THE BARBER GAS BURNER COMPANY
3704 Superior Avenue Cleveland, Ohio

BARBER *Automatic* JET GAS BURNERS

No matter how good your purification materials may be, full efficiency demands correct handling to meet the individual requirements of your gas producing set-up. New angles, created by changes in load factor—switching to heavy oil—gum troubles — etc. — create new problems. Connelly engineers, with 64 years' experience in handling these very problems, plus daily work in the field, are fully equipped to render a valuable advisory service.

CONSULT CONNELLY

There's no charge or obligation

Connelly IRON SPONGE

Made in U. S. A.
100% American Materials

CONNELLY IRON SPONGE & GOVERNOR CO.
CHICAGO, ILL. – ELIZABETH, N. J.

Avoid Liability For Injuries Caused By Gas Appliance Explosions

By
Leo T. Parker
Attorney at Law
Cincinnati, Ohio

RECENTLY, several important decisions have been rendered by the higher courts involving damage suits filed by consumers against gas corporations for injuries caused by explosions of gas appliances sold by the gas corporations. Therefore, we shall review these late and leading higher court cases in order to illustrate how gas corporations may avoid liability under similar circumstances. And late citations will be included in order that readers may have at hand for future reference verification of all statements and explanations of the modern law on this subject.

For the special benefit of readers, and for their advantage in defending legal controversies of this nature we shall select for purposes of review higher court cases offering special illustrations of testimony which enabled gas corporations to win suits.

First, it is important to know that mere happening of an accident is not evidence that any negligence of the gas corporation had a casual relation to its occurrence. Liability rests solely upon negligence, and the absence of the latter makes impossible the existence of the former. See Rice, 27 N. E. (2d) 193, reported June 5, 1940.

Law of Circumstantial Evidence

Frequently, the outcome of a litigation of this nature depends upon the testimony of gas company employes. This is particularly so when a suit is filed against a gas company by a person who was injured by a gas explosion alleged to have been caused by improper and negligent repairs or installation of the equipment.

It should be remembered that a gas corporation can *only* act through its agents; and where it sends its agents to repair gas appliances, the only way that the company can prove by direct and positive evidence that the repairing and inspection was not defective is by the testimony of these agents so sent.

Obviously, in cases of this classification the court necessarily must very often rely upon circumstantial evidence.

Therefore, it is important to know

that if the direct evidence establishes without dispute that the gas company was not negligent the verdict in favor of injured consumer is unlawful, although the gas company did not satisfactorily account for the occurrence. Moreover, a fact cannot be established by circumstantial evidence which is consistent with direct, uncontradicted, reasonable and unimpeached testimony that such fact does not exist.

For example, in Slaton v. Atlanta Gas Light Company, 7 S. E. (2d) 769, reported April 25, 1940, it was shown that a woman, named Alice, brought suit against the Atlanta Gas Company for personal injuries which she sustained as the result of an explosion of gas in her home, for which she asked the court to allow her heavy damages. She testified that three months previously the company employes had carelessly repaired the stove, that on this particular morning she had lit the top burners of the stove and oven preparatory to cooking some biscuits, that she did not know how long the oven had been lighted or heating, but she made up the biscuits and had them on the table close to the stove and had other things in the stove as usual when the stove exploded on the top, that the explosion did not blow the stove to pieces, that she did not know whether it blew the door open or not, and that she did not know how she got burned.

The counsel for the gas company proved that its employes had made certain minor repairs and adjustments on the stove, such as cleaning the burners which had become clogged with grease, dirt or jelly, had inspected the thermostat and oven and had found that nothing was wrong with either. Also, it was proved that within two hours after the explosion a company employe arrived at Alice's home, and that he tried to light the oven but could not do it because the heat control was cut back below the temperature of the oven and the oven was hot. There was no indication of an explosion. He testified that he then raised the temperature of the heat control to where gas would pass through to the oven and lit the burners, that this was done by turning the little red knob, that after lighting it he turned back the little red knob to where it would cut off the gas from the oven and the oven burners went out, and that he took out the by-pass plug or valve to see whether or not it was stopped up but he did not find anything wrong.

In other words, Alice's testimony seemed to indicate that the gas company's employes were negligent in failing to properly repair the stove, whereas the testimony introduced by the gas company's counsel indicated that the stove was not defective. Therefore, the higher court held the gas company not liable and said:

"If a suit is brought in good faith by parties who erroneously think that when the gas stove, which has been installed and recently repaired, by the gas company, explodes, the company is necessarily liable and responsible for injuries received from such explosion, where the company had not satisfactorily accounted for the occurrence . . . Generally speaking, the only effective defense or protection gas companies have against such law suits is the direct testimony of the workmen who did the work, and this is often true only on account of the rule that the negligence of the defendant (company) could not be established by circumstantial evidence which was consistent with the direct, uncontradicted, reasonable, and unimpeached testimony of the workmen who did the work, which direct testimony showed that the workmen were not negligent as alleged."

Therefore, it is quite apparent from the lesson supplied by this late

and leading case that testimony of gas corporation employes, where good character and reputation is fully established, is useful in winning a favorable verdict, particularly when such testimony is weighed against the testimony of the person who filed the suit and who, quite naturally, endeavors to present evidence likely to strengthen the suit.

In simplified form, Alice, in this above explained case, contended that the gas corporation employes were negligent in failing to repair a defective stove, and that this negligence resulted three months later in the explosion and injury; and the gas corporation employes presented testimony proving that although Alice's intentions may have been good, yet her contentions were incorrect. In this manner the gas corporation won the favorable verdict of not negligent, and, therefore, not liable.

While discussing the rules of law applicable to circumstantial evidence it is well to explain that circumstantial evidence is divided into two classes, viz: certain facts or those from which the conclusion in question necessarily follows; and uncertain facts, or those from which the conclusion does not necessarily follow, but is probable only, and is obtained by a process of reasoning. This latter is a conclusion which does not necessarily follow from the facts proved, but is obtained from these and other circumstances, by probable deduction. Other courts have held that it is sufficient if the circumstantial evidence affords a fair and reasonable presumption of the facts inferred. See Jackson, 111 N. J. L. 487; Humphrey, 118 N. J. L. 321; Menge, 192 A. 373.

Negligence Proof Avoids Liability

Few readers may have realized the utmost importance of introducing testimony proving that an accident, such as an explosion, resulted from negligence of one other than the gas corporation officials or employes. By this method and procedure the gas corporation may successfully avoid liability. Therefore, in order to clearly convey to readers certain data necessary to accomplish desired results in this respect we shall review in detail a modern higher court case in which the counsel successfully and satisfactorily avoided liability of the represented gas corporation, and ultimately the court unmistakably indicated whose negligence caused the explosion.

For illustration, in Mississippi Public Service Company v. Cunningham, 195 So. 472, reported May 16, 1940, it was disclosed that a property owner sued a gas company for damages to a new home caused by explosion of gas.

During the trial testimony was given which proved that the owner had entered into a contract with a contractor for construction of a new residence. It was to be a lock and key job. This meant that the contractor was to place within the house all fittings for the gas. In this construction, and as fitter, he left a gas pipe through which gas would flow underneath and against the kitchen floor, concealed and uncapped. The contractor also left a gas pipe protruding from the concrete floor of the furnace room, plainly to be observed, uncapped. This pipe also was to be connected at the wall of the house at the meter and through it gas would flow when and if connected at the gas meter.

The wife of the owner was of course much interested in this building, which she and her husband intended to occupy as their home; *and she was invested with authority as his agent* to act relative thereto. The wife, with full authority, went to the office of the gas company and directed its officers and agents to install the meter and connect the gas. The employes of the company complied with her order, dug the ditch, laid the pipe from the main in the street to the house. They connected this pipe with the house pipe, and then installed the company's gas meter and turned on the gas into the house. When the outside gas pipe had been connected with the pipes within the house, and the meter installed, thereby causing the gas from without to flow through the meter, that meter disclosed to the company employes that a pipe within was leaking gas. They cut off the gas by means of a cock, went over the house looking for the source of the leak, and discovered only the open pipe uncapped in the furnace room with paper wadded in the opening. Then they left the gas effectually *disconnected* from flowing into the pipes in the house. It required a Stillson wrench or some such tool to turn the gas into the house pipes.

Soon afterward the wife instructed the furnace contractor that she wanted the heating plant installed, as they desired to occupy the house the following Monday. The heating contractor proceeded to connect this open pipe with the heating plant. He and his employes went to the meter and turned the gas on and through the meter into the house pipes. Some one of them lighted the gas at the proper place, but the flame went out; and with the gas on at the furnace, an explosion occurred, greatly damaging the house. An inspection revealed that a copper cent had been substituted for a proper fuse in the electric lighting fixtures. This would cause flame or a spark, which would ignite gas; otherwise, this mysterious explosion is unexplained.

Neither the contractor nor the owner had ever called on the proper municipal authority for inspection and test of the inside pipes. Nor was any certificate issued by him or delivered to the owner, or the contractor. The witnesses of the gas company testified that gas meters were not customarily installed until after the official inspection and test had been made and certificate issued by the official town inspector.

It is interesting to know that the higher court held the gas company not liable and said:

"The gas company installed its meter and connected its pipes on the outside with the owner's or fitter's pipes on the inside. The meter then disclosed that gas was passing through the meter into the house pipe. This indubitably showed that the house pipe was leaking. Its employes then discovered the uncapped pipe in the furnace room protruding up through the concrete floor. They then made reasonable inspection of the entire house and then, as they had right to do, cut off the gas so that it could not be turned on by any person without the aid of a Stillson wrench or some such tool."

This court held that the general contractor and the heating contractor were negligent, and said:

"The gas company was not the fitter in this case. The record does not show that Bassett, the contractor, had ever turned over this house to the owner, but Mrs. Cunningham took charge and ordered the gas company to install the meter and Dill to install the furnace. Dill was guilty of negligence, so was Cunningham through his agent and wife."

Expert Testimony

When either an injured consumer or a gas corporation introduces testimony from a witness who, as a result of prior training, practical experience, and technical knowledge, is an "expert" of the facts on which he testifies, such evidence usually is convincing and may result in a favorable verdict for the one in whose favor the testimony is given.

For instance, in Jaeger v. Elizabethtown, 11 Atl. (2d) 746, reported April 14, 1940, it was disclosed that a gas company, acting as a dealer in gas ranges for domestic use, sold, and shortly thereafter installed in a consumers' dwelling, a combination coal and gas range, consisting of an oven and four burners.

Soon after the stove was installed it exploded, seriously burning the consumer, who sued the gas company for heavy damages. This consumer proved by expert witnesses, who were familiar with operation, construction, and efficiency of stoves of this kind that the stove was unsafe because of lack of "proper room circulation" and deficiencies of construction, adjustment and function. Also, other evidence was introduced which proved that there was inadequate air circulation, and "more gas" was fed in than could be lighted, whereby when the flame was turned to one-sixteenth inch flame there wasn't sufficient air entering into it to keep the burner lighted when the door was closed tight, and thus there was danger of explosion of the accumulated gas when the door was opened.

In view of this testimony the higher court held the gas company liable, and said:

"Defendant (company) represented the range to be of proper construction and function for safe domestic use; and there was tangible evidence tending to establish the contrary. . . . Pointing to the testimony of the expert witness that 'poor circulation' in the room in which the range was installed might be a contributing factor, the contention is made that the onus was on plaintiffs to 'exclude inferences of negligence which could be drawn from causes or omissions not attributable to appellant.'"

Therefore, it is quite apparent that in cases of this kind the important thing for those who defend the gas corporation is getting testimony from employes, expert witnesses, or others, who may be able to testify truthfully and in a manner designed to convince the jury that the fault was in the consumer and not that of the gas company employes. In this manner, the jury will be enabled to render a verdict favorable to the gas company.

In the above cases we have examined in detail such facts as may be depended upon to, in combination with detailed testimony, establish in the minds of the jurors that the gas company officials were not negligent, and that the employes used at least ordinary care to prevent injuries to consumers. With the details of these necessary facts and required testimony before them, it should not be difficult to avoid legal controversies of this nature or, at least, to win a favorable verdict when suits are unavoidable. Now, we shall briefly review recent and leading higher court cases and state, in the words of the courts, the law on this subject.

In Maise, 137 S. W. 1104, reported April 16, 1940, the court said:

"Negligence is a failure to do what a reasonably prudent person would do or refrain from doing under the identical circumstances."

In Ames, 139 S. W. (2d) 183, the court held:

"The issue of the proximate cause of an injury is a question to be determined by the jury after listening to the testimony, but the evidence may be so convincing that the court will decide the liability of the parties."

In Bress, 100 Pac. (2d) 416, the court held:

"Where the minds of reasonable persons may differ, after listening to the testimony, then the jury must weigh all facts and render its verdict accordingly, as to who is negligent."

In Lyon, 102 Pac. (2d) 422, reported June 7, 1940, the court held:

"Where the cause of an injury results from neglect or refusal to obey a law, the negligent person is liable unless the negligence of the other is greater."

In Locklear, 8 S. E. (2d) 321, reported May 7, 1940, the court held:

"The violation of a state law, which results in an injury, will not be the cause of liability unless such violation proximately caused or contributed to the injury."

In Hansbury, 13 A. (2d) 216, reported June 8, 1940, the court held:

"The mere happening of an accident will not result in liability of a corporation, unless the injured person introduces testimony which shows that the corporation's agents neglected their duty in some manner, and that this particular neglect caused the injury."

All sizes up to 3,400 cu. ft. capacity

Meters
Diaphragms
Repairs
Provers
Pumps
Calorimeters
Wet Meters
Gauges
Apparatus

METER REPAIR PARTS

FOR

ALL MAKES — ALL SIZES OF METERS

LARGEST GAS COMPANIES NOW USING OUR PARTS

SEND FOR OUR CIRCULAR ON METER REPAIR PARTS

SAMPLES AND PRICES GLADLY SENT

— 0 —

LAMBERT METER CO.

PLAINFIELD, NEW JERSEY

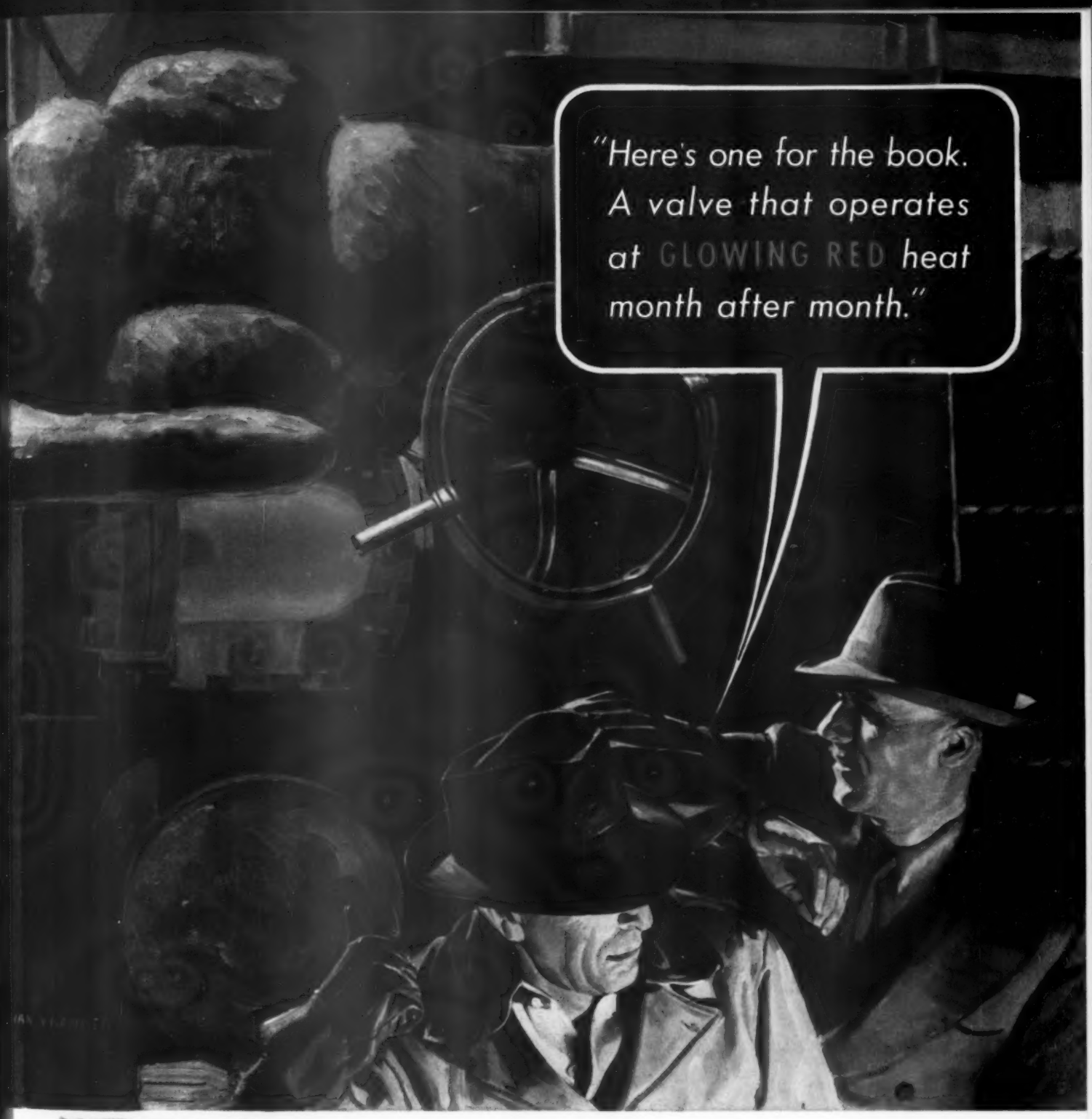
This Pump Governor Regulates Discharge

IN the steam line leading to any steam-driven pump, whether working in oil, other liquid, or gas, the Fulton Constant - Pressure Pump Governor will regulate discharge pressure very exactly. The diaphragm of the governor is connected to the discharge pipe and any variation of pressure there immediately affects the valve by which the speed of the pump is controlled. Both spring-weighted and lever-type governors are offered. Write for Bulletin No. 4096, also for new Catalog.

FULTON Constant-Pressure Pump Governor

The CHAPLIN-FULTON MFG. CO.

28-40 PENN AVE. CF PITTSBURGH, PA.



950°

"Stop kidding me! There's no lubricant that will operate in a red-hot valve at 950°," declared the visiting engineer. *But there it is!* In service for many months on a cracking line, in a refinery, this Nordstrom Hypreseal Valve has been making history. In many other refineries, operating topping units, this same type of valve is likewise rendering perfect service at temperatures of 675° F., without a leak; always easy to turn, even if carbon slugs settle in the line. There's no place in which any deposit can lodge. This amazing valve is made of special alloy; the body and plug are Merchromed; (patent pending). The plug is hot lapped at approximately the service temperature. The lubricant is a special compound developed by Nordstrom for this drastic temperature. Just more proof that Nordstrom Valves are truly engineered for the "toughest jobs." Keep upkeep down with Nordstroms.

—naturally it's a **NORDSTROM VALVE**

Introducing MERCHROMED *Valves*

PATENT APPLIED FOR

A PROVEN ENGINEERING ACHIEVEMENT BY NORDSTROM

MERCHROMING

—a highly-technical metal alloy process.

—an impenetrable coating on plug and body.

—specially bonded to friction surfaces.

—gains lowest coefficient of friction.

—invulnerable to corrosion, erosion.

—for temperatures as high as 1000° F.

—prevents galling and scoring.

—applicable to various Nordstroms.

UNRETOUCHED PHOTOS

MERCHROMED PLUG ***in the rough*** **SAME PLUG** ***after machining***

NORDSTROM HYPRESEAL MULTIPORT, SHOWING MERCHROMED BODY

After Merchroming is completed in the body and on plug by special welding, the rough surfaces are ground or machined to final dimension; then the plug is "hot-lapped" into the body. Contacting surfaces have a low-friction, super-finish; intensely hard and perfectly fitted.

Again reflecting the initiative of Nordstrom engineers in offering the most advanced methods of valve manufacturing, *MERCHROMING* is presented. It is a process in which a special welded coating is applied to the rotating, frictional surfaces of the plug and its contacting body. Merchroming provides a coating of extreme hardness, corrosion-resistant, capable of maintaining its properties at temperatures as high as 1000° F. The plugs are "hot-lapped" into the bodies at a temperature corresponding to the service for which they are intended, assuring the most accurate fit and extremely smooth operation. Further details upon request.

While Merchromed Valves may be unnecessary for your services, this new development in valve manufacturing indicates the ability of Nordstrom engineers to provide for every service. Only Nordstrom Valves meet every major valve need.

KEEP UPKEEP DOWN WITH NORDSTROMS

Nordstrom LUBRICATED VALVES

Sealdport Lubrication

MERCO NORDSTROM VALVE COMPANY—*a Subsidiary of* Pittsburgh Equitable Meter Company

WORLD'S LARGEST MANUFACTURERS OF LUBRICATED PLUG VALVES; GASOLINE, OIL & GREASE METERS

Main Offices: 400 Lexington Ave., Pittsburgh, Penna.

BRANCHES: New York City, Buffalo, Philadelphia, Columbia, Memphis, Chicago, Kansas City, Des Moines, Tulsa, Houston, Los Angeles, Oakland.

CANADIAN Licensees: Peacock Bros., Ltd., Montreal. • *EUROPEAN Licensees:* Audley Engineering Co., Ltd., Newport, Shropshire, England

PRODUCTS: Nordstrom Lubricated Valves; Air, Curb and Meter Cocks • Nordstrom Valve Lubricants • EMCO Gas Meters • EMCO-McGaughy Integrators EMCO Regulators • Pittsburgh Meters for Gasoline, Grease, Oil, Water and other Liquids • Raybould Couplings • Stupakoff Bottom Hole Gauges

Geochemical Prospecting

A New Method of Gas and Oil Exploration

By

S. E. Slipper

Consulting Geologist,
Calgary, Alberta

GEOCHEMICAL prospecting is the latest of all exploratory methods to be used in the search for oil and gas. It is more often and also more correctly called (1) Soil surveying, (2) Ground gas surveying or (3) microseepage surveying. Most of the ideas are well known; that which is new consists in the development of a systematic theory and technique of application to the discovery of oil and gas. Essentially it consists in collecting samples of the surface soil or of the upper formations and analyzing for hydrocarbon gases and compounds which are said to indicate the occurrence of petroleum at depth. A variation of this is to collect the surface gases or shallow gases by pumping them from the upper beds and analyzing for hydrocarbons.

Historical Background

The early discovery of oil and gas in wells was by pure chance. It has remained a matter of chance ever since because the origin and manner of accumulation are still unknown and the modes of occurrence are so varied that no certainty obtains regarding the presence or absence of oil and gas in commercial quantities at a projected location in an undrilled area. From the very beginning prospectors have looked for criteria which would reduce the odds against them. For the first twenty years, 1841-1860, about the only indications recognized were visible gas and oil seepages or springs. Wells were drilled wherever such were found and in many of the early eastern fields seeps were numerous. Probably most known seepages of any size in eastern fields were drilled up early in that development, but eventually prospectors learned that not all seeps were directly above oil or gas pools since dry holes as well as producers were drilled on seeps.

With the advent of the geologist and his famous anticlinal theory, the indirect structural methods of locating oil fields came into general practice. It has been brilliantly successful because as is now known well over 50 per cent. of known oil fields are found on closed anticlines and domes and a large part of the remainder are on structural variations similar to anticlines. Since about 1922 geophysical methods have been added to the geologist's skill in locating structures. The application of geophysics has become so efficient in locating hidden structures that some concern is now expressed that most of these (in the oil areas of the United States) will very shortly be discovered.

"Structure hunting" on the basis of the anticlinal theory both by the geologist and geophysicist, is an indirect method of exploration; discovering only the occurrence of the conditions favorable for the accumulation of oil. The actual presence of petroleum or gas is not demonstrated. Many a perfect anticline or dome has been found by geologists and geophysicists only to be proven "dry" on a drill test. It is also true that random drilling (hunches) has discovered major fields (like East Texas) in areas condemned or ignored by geologists and geophysicists; the reason of course being that these accumulations are in "traps" which are stratigraphic and not structural and cannot be located by structural methods.

A direct method of exploration which will definitely indicate the presence of gas and oil is required to (1) determine whether an anticline discovered by other means actually contains oil or gas and (2) to discover stratigraphic accumulations that are not found by structure prospecting. Realizing that such a direct system of prospecting was becoming increasingly desirable many of the major companies and more active consultants have been working on the problem. The most active research work has been done by the larger geophysical companies whose laboratory facilities and reserve capital permitted them to do the elaborate and expensive experimental work required.

Gone are the days when the early prospector sallied forth with his "wiggle-stick" or "doodle-bug,"—the divining rod consisting of a forked hazel twig. In the hands of one who had the "tetch" this contrivance was supposed faithfully to ferret the hidden terrestrial treasure.—Ed.

Development

Russian scientists have been investigating soil gas surveying for a number of years. They have contributed much valuable material, but have constructed rather novel formulae which probably do not take into account the heterogeneous nature of soils and sedimentary strata. Nevertheless their researches and experiments have been valuable as a preliminary ground work. The present author's interest in the meaning of gas seepage was first aroused in 1918. However his enquiry was in the direction of the meaning of variations in the composition of natural gas in not only seepages, but also in shallow gas showings in wells and in gas sands. A few other geologists [1]

Presented at the 33rd Annual Convention, Canadian Gas Association (Pacific Coast Gas Association participating), Jasper Park Lodge, Alberta, Canada, July 3, 4, 5, 1940.

[1] *Paul H. Price and A. J. W. Headle—Analysis of Oriskany Gas in Kanawba County, West Virginia, with Some Interpretations—Oriskany Sand Symposium.*

and chemists have also followed similar studies, but very little has been published.

The geophysical companies of the Gulf Coast and California have been largely concerned with placing the soil gas surveys on a systematic and practical basis that could be developed commercially. The work of Rosaire and McDermot and their efforts to popularize the service have been admirably done. These scientists and others have simplified and co-ordinated the Russians' rather visionary theories.

Geochemical gas surveying has three essential divisions, each of which had to be developed before the art could be considered practical. First, the basic theories had to be coordinated into a working hypothesis. Second, highly precise analytical methods had to be devised and improved and, third, practical field methods for the collection of samples were necessary.

Theoretical Basis of Gas Surveys

The visible natural gas and oil seepage is evidence that gas or oil exists underground somewhere in the surrounding locality. The source may not necessarily be directly beneath the surface location of the spring; it may have a shallow or deep origin, and it may or may not proceed from an accumulation of commercial size. Nevertheless the proof is direct that gas or oil in large or small amounts does occur. Of course there are seepages of gas which are not natural (hydrocarbon) gas. Such gas may "seep" from coal deposits or marshy beds and in these cases which are very frequent, the seepage does not have any significance.

Special circumstances must exist in order to make a gas seep visible and in general a gas seep is not easily found unless shallow still water covers the exit of the gas so that visible bubbles may be noted. If the water is too deep the pressure will prevent the bubbles; if the water dries up no agitation if observed. There must be many surface gas seeps which have never been discovered. It is the conviction of many observers that all oil and gas accumulations have an emanation of gas spreading outward from the pool. These emanations in general are extremely minute (microseepage) though occasionally of visible proportions. This is the fundamental idea of microseepage surveys. It stands upon the fact that oil and gas accumulations are, with few exceptions, found in sedimentary deposits and all sedimentary rocks are porous.

According to experimental physics gases will traverse all porous media, in fact some gases under certain conditions will pass through any media whether porous or not (e.g. hydrogen through steel.) There are also faults, fractures and joint planes in the strata which will allow the upward movement of natural gas with greater or less ease. The gas will also move laterally along the bedding planes and much more readily too, but the whole thought of soil gas survey is confined to the idea of upward movement across the overlying "cap rocks" of the oil or gas pool to the surface. When the overlying formations are very porous and the beds are affected by faults, fractures and joint planes, the beds are said to be permeable and the gas travels by permeation. That is, it follows the ordinary laws of gas flow and its movement is retarded only by the viscosity of the gas and the size of openings. However, the beds overlying an oil field are usually not very permeable. In fact the "cap rock" of an oil field is supposed to be impervious. Of course, the "cap rock" is not really impervious, but it must be of low permeability and when gases do traverse such "tight" formations they do so by *diffusion* according to Grahams Law which will be discussed later on. It is important here to note that there is no doubt that gases can and do travel upward across strata from oil and gas bodies by diffusing through them. The movement is extremely slow and the amount diffused is relatively minute, but because of the great length of geologic time, geologists have no difficulty in agreeing that gas may have diffused thousands of feet upward through rocks of extremely low permeability.

When formations have been subjected to tensional forces, fractures, normal faults, opened joint cracks and release of pressure are likely to occur. Such breaks induce a certain amount of increased permeability and so seepage, either visible or minute, occurs on the axis of anticlines. A vertical uplift causing a dome, such as a salt dome, will produce tensional strains on the periphery of the dome and there will be minute or visible seepage in circular form around the dome. A normal fault opens up a permeable zone transverse to the bedding planes upward to the surface and along which seepage of any magnitude will take place if the fault cuts beds which contain gas or oil. On the other hand an overthrust fault is likely to be very impermeable along its thrust plane. Several other conditions of increase in traversed permeability might be mentioned. Hence formation samples collected over such structures with induced transverse permeability will give more favorable gas analyses (higher ratios of hydrocarbons in the ground gas) than over the surrounding terrain where gas moves upward by diffusion only. Providing, of course, that the structure contains oil or gas.

In general the composition of a natural gas may be divided into two (1) The hydrocarbons. (2) Inert gases. The hydrocarbons are as follows:

	Chemical Formula	*Molecular Weight*
GASES		
Methane	CH_4	16
Ethane	C_2H_6	30
Propane	C_3H_8	44
Butane	C_4H_{10}	58
VAPORS		
Pentane	C_5H_{12}	72
Hexane	C_6H_{14}	86
Heptane	C_7H_{16}	100
Octane	C_8H_{18}	115

Occasional occurrences of hydrocarbon gases other than the paraffins are sometimes reported.

INERT GASES		
Nitrogen	N_2	28
Hydrogen Sulphide ...	H_2S	34
Carbon Dioxide ...	CO_2	44

Rarely traces of Oxygen (O_2), Carbon Monoxide (CO), Hydrogen (H_2) and Helium (He).

The hydrocarbon vapors are found in gases which are known as wet gases and these four vapors will condense with pressure and lower temperature into gasoline.

The inert gases, Nitrogen, Hydrogen Sulphide and Carbon Dioxide when found in natural gases give considerable geochemical information depending upon the proportions in which they replace the hydrocarbons. Usually, however, the soil gas analyst considers only the hydrocarbons in the gas.

Grahams Law of diffusion (and effusion) states that the relative speeds of diffusion of gases are inversely proportional to the square roots of their relative densities. When therefore a mixture of gases like natural gas diffuses through a semi-permeable porous medium like shale, limestone and so forth from a common source, the gases of lightest density in the mixture will travel farthest in unit time. Hence there will be a separation, or a stratification of the gases outward from the source through the surrounding semi-permeable medium.

For example the lightest gas, Hydrogen, if assumed to have a molecular weight of 2 will have a density of one and hence its speed of diffusion is unity. Accepting this standard, Methane, with a molecular weight of 16 and a density of 8, has a diffusion speed of 0.25. In the same way the diffusion speeds of all the gases of the natural gas mixtures may be calculated so that if a mixture of gas containing hydrogen methane, ethane, propane, butane is surrounded by a semi-permeable homogeneous container and allowed to diffuse into the containing walls, then, when hydrogen has diffused 100 feet the other gases will have diffused as follows:

Methane	35 feet
Ethane	26 feet
Propane	21 feet
Butane	19 feet

If also the inert gases, Nitrogen, Hydrogen Sulphide and Carbon Dioxide are present the distance of movement of these gases would be:

Nitrogen	27 feet
Hydrogen Sulphide	24 feet
Carbon Dioxide	21 feet

This law applies to diffusion only through semi-permeable media, but the effects of viscosity on gas mixtures travelling long distances through formations of very low permeability are similar to the effects of diffusion, and a similar stratification of the gases occurs.

Application of the Theory

The following then are the two general principles on which gas surveys are based:

(1) Natural gas mixtures permeate and diffuse upward from oil and gas accumulations but do so at a greater rate of speed in zones of tensional strain (i.e. where fractures, faults, open joint planes occur) and there are therefore greater concentrations of the heavier constituents in surface beds along zones than in the surrounding area. Such tensional strains occur on anticlines and other oil structures, therefore, if a structure contains oil it will be detected by ground surveys on the structure.

(2) Natural gas mixtures in permeating and diffusing upward from a petroleum source are stratified according to the density of the individual gases; the heaviest hydrocarbon gas is relatively closest to the source, while the lightest is farthest from the source at a given time. Hence if a set of soil samples or well samples show a progressive increase in the ratio of propane to the methane and ethane then the oil accumulation is in the direction of the increasing ratio.

The geochemical method claims to be a direct method, useful in discovering the occurrence of oil and gas accumulations irrespective of the existence or non-existence of favorable structure. In theory then it should eliminate chance in exploration. In practice, of course, this will not be so. However, it is believed that it will measurably reduce the odds against the prospector. At present the method is not more than qualitative; it cannot definitely determine beforehand the quantity of fluid in the source from which the emanation issues and consequently does not forecast the commercial value of the source though deductions can be made from the intensity and area of the seepage ground. Again it cannot determine the permeability or porosity of the reservoir rock containing the oil or gas from which the emanation proceeds.

Field Methods

Most of the systematic methods of ground surveys consist in taking "scoop" samples of the soil immediately below the grass roots along surveyed lines at intervals of four or more per mile. These samples are then taken to the laboratory in sealed containers and the gas extracted for analysis. In the author's opinion this method is applicable only in such areas where the ground below the grass roots is the residual soil (i.e. composed of disintegrated country rock). In areas covered with drift or recent deposits it is necessary to take samples from the formation below the overburden. To do this short drill holes are spaced across the prospect and samples are taken from the drill cores or cuttings for analysis.

Analytical Methods

Not until low temperature fractional distillation methods of gas analysis were invented could practical micro-seepage analyses be made. Combustion analyses cannot determine the constituents of a gas mixture with the necessary precision. Even these newer methods had to be improved and re-designed in order to reduce the time and expense of analyses. Several variations of the original apparatus have been devised until now fractional low temperature analyses of a high order of accuracy can be made rapidly and cheaply.

The United Geophysical Company of Pasadena has perfected the mass spectrograph for analyzing minute quantities of gas mixtures. This apparatus obtains marvelous results and probably will add greatly to the future usefulness of geochemical surveys.

Conclusion

Geochemical prospecting by means of gas surveys for gas and oil is the most modern of exploratory methods and promises great things in reducing the odds against discovery. It is a direct method for locating these fluids, and as such it has advantages over indirect methods of structure prospecting and is equally useful in combination with geophysical prospecting or as an independent method. It has been in use for a number of years in Russia and for a short time in the United States, but is still in some respects in an experimental stage. There is no doubt that geochemical gas surveys will be of increasing importance in the exploration of gas and oil pools.

New Purification Equipment for Boston Consolidated Gas Co.

Koppers Company, Engineering and Construction Division, has been awarded a contract by the Boston Consolidated Gas Company, Boston, Mass., for the construction of modern equipment for the purification of manufactured gas which is supplied to domestic, commercial and industrial customers in the Boston area. The new plants will replace equipment which has been used for the same purpose.

Both plants will be built at the gas company's plant at Everett, Mass. They will consist of a Thylox plant for the removal of sulfur and a plant for the removal of gum. The Thylox plant will be able to remove sulfur from an average flow of 36,000,000 cubic feet of gas a day and can be stepped up to handle 45,000,000 cubic feet a day. The gum removal plant will be able to remove gum from approximately 66,000,000 cubic feet of gas a day..

Construction will be started at once and both plants are to be completed by Sept. 15.

Accidents in the Public Utility Industries During 1939

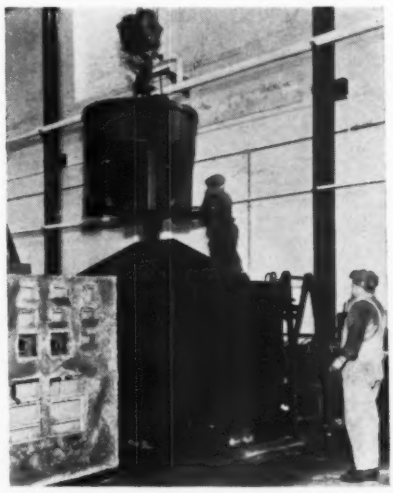
The National Safety Council has issued its annual statistical report on accidents in the Public Utility Industries.

This report shows, among other things, the predominant causes of these accidents and which companies made the best records.

It includes a tabulation of some 30 pages and may be obtained from National Safety Council, 20 North Wacker Drive, Chicago.

Pre-Cast Manholes

Shop Construction Method Employed by Consolidated Edison Company



Pouring concrete into forms at construction shops to make the caisson wall section of a pre-cast manhole. This operation formerly was among the many once done in the field.

Building a manhole formerly took crews of the Consolidated Edison Co. of New York about five days from the time pavement was broken until it was restored. Today, thanks to the successful application of caisson technique, which makes the use of pre-cast manholes practical, the same job is done—and done better—in about eight hours.

Within the past two years about two hundred new-style manholes have been built in the shops and installed by distribution construction forces. This actual field experience has confirmed the judgment of their engineers in the caisson method so that it is now standard except in locations where there is an unusual congestion of sub-surface structures.

Manholes used to be literally custom-built. After the pavement was broken and a hole dug, temporary shoring was installed. When steel reinforcing rods were put in place and wooden forms adjusted, concrete was poured to form the floor and sides. Then the work crew would be shifted to some other job for a couple of days until the concrete hardened. Eventually, the shoring and forms were removed, the cover slab, frame and gratings set in place and the pavement restored.

In the new method, many of these field operations are transferred to the construction shops. The placing of the steel reinforcement, the assembling of the forms and the pouring of the concrete are done under convenient and efficient working conditions.

These pre-cast manholes are made in three sections—a top, a bottom and a section which consists of the four side walls. It is this wall section that forms a caisson. When the pavement has been removed at the site, the wall section is set in place and the earth within it removed by clamshell bucket. The concrete bottomless box serves as an integral shoring assembly, eliminating the former timbering and adding greatly to the safety of the workmen.

At intervals, men with pneumatic shovels are sent into the hole to remove the earth under the walls, causing the caisson to sink of its own weight. This process is repeated from three to six times until the walls have been lowered to the depth required, a task which usually takes no more than sixty to ninety minutes to complete.

The earth base for the floor is leveled and tamped and the pre-cast floor slab lowered into place and bolted to the wall sections, thus making an integral unit of the manhole. Whenever required, a precast sump pit is fitted into an opening in the floor. The joints between the sump pit and the floor as well as between the floor and the walls are sealed with cement.

The manhole roof section is then put in place. What openings there are around the caisson walls are backfilled and tamped and the street pavement is restored.

One of the factors which make the use of pre-cast manholes practicable is a specially-designed crane truck, which places the various sections in position, provides compressed air for the pneumatic shovels and clamshells which remove the dirt from within the caisson walls. The crane has a lifting capacity of fifteen tons and the truck is particularly mobile, with speeds up to thirty-five miles an hour.

Excavating the earth from within the concrete caisson which forms the walls of a new manhole. The earth is removed until the walls sink to the required depth. The 15-ton crane truck is also used to put the manhole sections in place.

From "Around the System"

CURRAN-KNOWLES GAS AND COKE OVENS

Successfully carbonize Low Volatile, High Volatile, Swelling or Non-Swelling Coals.

Give a high yield of superior quality coke for water gas generator fuel, industrial and domestic use; a high yield of tar of excellent quality and a uniform quality of gas which meets Commission requirements.

Top of Ovens Curran-Knowles Plant in British Columbia, Canada, where low volatile expanding coal is carbonized.

Substantial construction. Low initial cost per M. capacity. Low operating cost due to simplicity of design.

Built to suit any situation. Over 5 years' successful operation.

Ask for bulletins showing plants and products.

COAL CARBONIZING CO.

Bank of Commerce Bldg. St. Louis, Mo.

GAS SERVICE STOPS

SINCE 1869 Hays has built dependable brass products for the Gas Industry. Standard, Special Weight, Heavy Pattern and High Pressure Stops to meet all requirements are manufactured by Hays in a full range of sizes. Write for Catalog No. 4 today.

HAYS MANUFACTURING CO. ERIE, PA.

VISIT OUR NEW BAR AND TERRACE

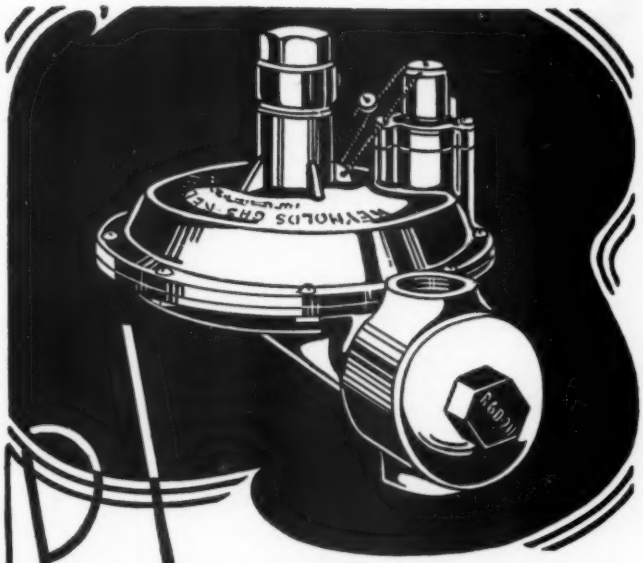
HOTEL CHELSEA

AS FRIENDLY AS YOUR HOME—OFFERS DIVERSION FOR EVERY MEMBER OF THE FAMILY

Concerts and dinner music by artists of Phila. Orchestra ● Luncheon served guests in bathing attire on open air dining terrace ● Restricted beach ● Bathing from rooms ● Dancing ● Bar ● Sundecks ● Social Director ● Kindergartner ● Noted cuisine.

RATES FOR ROOM, BATH & MEALS **$6.50** (Per Person, Two in a Room) FROM **DAILY**
ALSO EUROPEAN PLAN — Proportionately Less

ATLANTIC CITY
JOEL HILLMAN • J. CHRISTIAN MYERS • JULIAN A. HILLMAN



Performance

REYNOLDS has nearly half a century of successful experience in the Gas Control Field, working out, designing, building and testing gas regulators, and the result: More than a million regulators in use throughout the world, meeting all requirements and giving successful performance.

REYNOLDS Service Regulators are built to meet the specific requirements necessary in service regulation. They are guaranteed to give the high quality of performance you demand over years of operation with a minimum upkeep. Below are a few characteristics of the different Models 10, 20, and 30.

3 GREAT SERVICE REGULATORS

MODEL 10 . . .

Dead Weight Adjustment or Spring Type Adjustment, without Mercury Seal, with Mercury Seal or with Dead Weight Seal. Diaphragm operated spring adjusted relief valve built in the top obtainable in the Spring Type Adjustment only. Made with removable spring. All working parts accessible and interchangeable without removal from pipe line.

MODEL 20 . . .

Dead Weight or Spring Type, with or without Mercury Seal, or Dead Weight Safety Seal. All working parts are so accurate as to permit complete interchangeability in shop.

MODEL 30 . . .

For Horizontal or Vertical Connections, with Removable Valve Pockets. Dead Weight Adjustment or Spring Type Adjustment. With Mercury Seal, without Mercury Seal, or Dead Weight Seal. Diaphragm operated spring adjusted relief valve built in the top obtainable in Spring Type Adjustment only. Made with removable spring.

GAS CONTROL SINCE 1892

REYNOLDS GAS REGULATOR CO

ANDERSON INDIANA U.S.A.

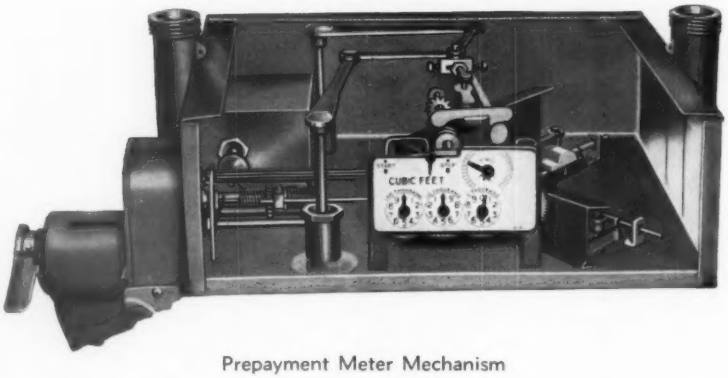
New Equipment

New Prepayment Meter

American Meter Company's new Catalog PG-4, a comprehensive and well-illustrated booklet on prepayment meters, has been issued.

It discusses the functions of coin-operated gas meters; defining their various fields of application and methods of use. It describes newly-developed construction features of "American" prepayment meters—now presented with completely redesigned prepayment mechanism; lists the numerous types of indexes available; and shows, pictorially and in convenient tabular form, the exterior and interior parts of the coin-operating mechanism and accessories.

Copy may be obtained by addressing your nearest American Meter Company office.



Prepayment Meter Mechanism

Resistoflex PVA for Fire Extinguisher Hose

A specially compounded PVA tube (flexible synthetic resin, basically of Polyvinyl Alcohol composition) is utilized for the construction of this Resistoflex PVA Fire Extinguisher Discharge Hose—which

Resistoflex Hose Application

is a special type of Resistoflex Corporation's "Super-Chemical" hose. Since PVA is distinguished by complete inertness to hydrocarbons, the tube is unaffected by carbon tetrachloride—and does not harden, check or crack due to aging, corona, or other service conditions.

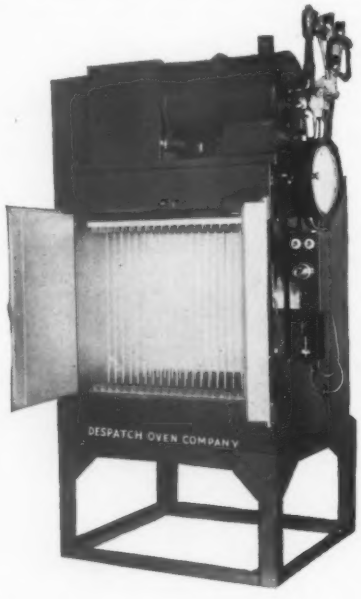
This hose remains flexible under all atmospheric conditions and temperatures. For example, it is able to withstand cold in excess of —50° F. It is extremely rugged, and will stand flexing almost indefinitely.

The hose is made by Resistoflex Corporation, Belleville, N. J.

Gas-Fired Tempering and Drawing Furnace

The illustration below shows a furnace for tempering and drawing on band-saw blades, which are wrapped in coils and rolled into the furnace in upright position. Maximum operating temperature is 800°F., though the same type of furnace to give a maximum temperature of 1250°F. by increasing the insulation thickness is also made by Despatch Oven Company of Minneapolis, Minn.

The furnace illustrated is 35" wide, 30" high and 30" deep. It is



Despatch Tempering Furnace

provided with side observation doors with special heat seal arrangement. The doors are equipped with compression type latches and the furnace has recording temperature control system and full safety arrangement.

A controlled combustion air heater is mounted at the top with a high temperature, high capacity fan to supply the heat. The air passes through ducts at the bottom of the furnace and travels vertically to recirculating ducts at the top.

A horizontal flow design is also available.

New Safety Lantern

An electric safety lantern for use in the presence of combustible gases and vapors, designated as No. 72 Dual Ecolite, is made by Economy Electric Lantern Co., 3102 W. Cherry Street, Milwaukee, Wisc.

Having a die-cast reflector, the side light effects a powerful focusing spotlight with a range of approximately 1500 feet. The top light, with a concave reflector gives a diffused light when needed. Pivot mounting enables either or both to be used in any direction.

Mazda No. 27 bulb is used for the side light and No. 502 for the

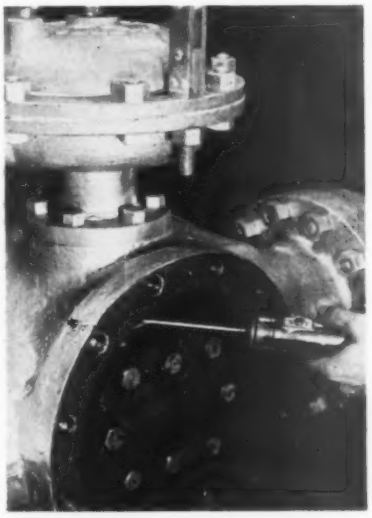
top. Standard 6 volt batteries are used and provision is made in the lantern base for storage of 2 extra bulbs.

This patented device carries the approval of the Underwriters Laboratories for use in hazardous locations.

and Appliances

Flashlight Extension

To inspect the interior of gas meters, gas connections, valves, regulators, etc., in difficult-to-light places, a novel flashlight bulb extension has been developed.

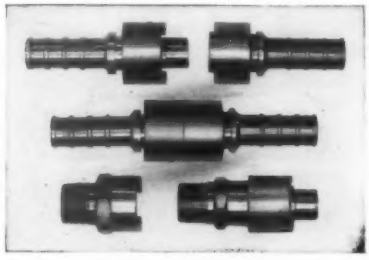


Made in lengths from 6" to 36", its plug end is screwed into any flashlight with the bulb in the opposite socket. Being bendable, it can go down into intricate mechanisms or through tortuous passages. Metermen frequently find need for such a light when the meter is placed under a house or is too distant for clear reading. The extension light can be placed next to the dial for accurate reading. For repair work it can be bent to form its own stand or hook. Known as the Sierra Flashlight Bulb Extension, it is made of special wire encased in high-grade aluminum alloy tubing. It is water-proof and can be bent any number of times without weakening. This new device, the Sierra Flashlight Bulb Extension, for gas men and inspectors, is made by the Sierra Aircraft Company, Sierra Madre, California.

Bronze Hose Coupling

The Pittsburgh Brass Manufacturing Company, 3264 Penn Ave., Pittsburgh, Pa., has developed a new line of cast bronze hose couplings for joining similar or dissimilar sizes of rubber hose on air, water, steam and gas lines operating up to 200 lbs. pressure per sq. in. Under the trade name of "Fuline" they are of particular interest to public utilities, chemical, marine and the construction industries.

In addition to quick opening and closing features, Fuline hose couplings employ a positive locking device. When connection is made, there is no chance of lock spring escaping from sleeve and causing possible accident. This safety feature is particularly valuable when



Cast Bronze Hose Coupling

coupling is employed on air compressors and for steam connections in boiler rooms, etc.

Illustrations show male and female Fuline hose couplings ready for connecting and also connected, as well as male and female pipe ends.

Standard sizes, ⅜", ½", and ¾". Larger sizes built to specifications. Descriptive literature on request.

Ratchet and Three-Way Threaders

Latest additions to the RIDGID line of pipe tools made by The Ridge Tool Company of Elyria, Ohio, are five new Ratchet and Three-Way Threaders for small pipe.

Nos. OOR, OR and 11R are of new stronger design in all-steel malleable-alloy. They thread ⅛" to ¼" pipe. Separate sets of semi-high-speed tool steel chaser dies are accurately cut, easily removed for regrinding. In No. OOR, die heads are quickly locked in or removed by a pull of the ratchet knob. In Nos. O and 11R die heads push out easily for changing, snap into ratchet ring from either side, can't fall out. No special dies are needed for threading pipe close to wall; it is only necessary to turn dies upside-down and shift to positions marked on die-heads. A carrier which conveniently holds the ratchet ring and set of dies is supplied with all complete sets.

No. OR and 11R RIDGID Ratchet Threaders for ⅛" to 1¼" pipe.

No. 30-A and 31-A 3-way Ratchet Threaders for ⅜" to 1" pipe.

The Series Nos. 30A and 31A three-way threaders for small pipe have virtually the same features as the series described above. They are compact, have double ball-end handles and thread pipe from ⅜" to 1".

Gas Fired Air Conditioner For Small Homes

The Dalzen Manufacturing Company, 511 Leib Street, Detroit, announces a Hi-Boy Model winter air conditioner for the small home-building field.

This gas-fired unit is equipped with a Dalzen multi-tip gas burner which operates on the complete range of gas pressure. Each tip is a gas burner in itself, supplying at normal pressure, approximately 3000 B.T.U. input. It is one of the most easily serviced gas burner assemblies available.

A compact unit which is delivered as a complete packaged product. It will pass through a 28" door, takes up but little more than 4 square feet of floor space. Not too high for a cellar installation and appropriate for the utility room.

3 Important Advantages that answer ALL your Purification Problems:

❶ The Material—

LAVINO ACTIVATED OXIDE. Supplied in unmixed form . . . ready for mixing with your own carrier . . . LAVINO "ACTIVATED" OXIDE is readily adaptable to the needs of your plant, whatever its size or requirements.

Not merely a "satisfactory" purifying medium by virtue of incidental properties, it is a material made specifically for maximum H_2S removal. As such, its practical capacity and activity are controlled factors. And, it offers maximum activity for trace removal and maximum shock resistance. Contains 70% active Fe_2O_3 as received; approximately 10% moisture.

LAVINO ACTIVATED SLURRY. A new development in purifying materials, is shipped in steel drums . . . ready, with the addition of a small amount of water, to mix with any type carrier. Is used successfully also as a catalyst in liquid purification.

Contains 55% active Fe_2O_3; 25% to 30% moisture.

LAVINO ACTIVATED SPONGE is furnished ready mixed, carefully coated on large, tough, specially selected hardwood shavings.

All Lavino Activated Oxides are disinfected to minimize formation of mold or other fungus growth.

❷ Its Instant Availability—

Lavino Activated Oxides are AMERICAN MADE, available for prompt shipment.

❸ Its Positive Assurance of Low Cost H_2S Removal—

In all cases where gas purifying practices are such as are recognized generally as standard — E. J. Lavino and Company GUARANTEES a definite maximum cost per pound of sulphur removed. (Your individual guarantee submitted on application.)

E. J. LAVINO and COMPANY

1528 Walnut St., Phila., Pa.

Call us in; let us show you exactly how much a Lavino Activated Oxide can save you—without effort on your part!

LAVINO "ACTIVATED" OXIDES ★★

TITAN WATER HEATER CONTROLS

AGA Approved TITAN Temperature and Pressure Relief Valve

This device is installed on the hot water outlet in the tank directly in the flow of water. Action, as a result, is unfailing and positive, there being no dead pockets to prevent proper functioning of relief valve.

Pressure relief is obtained through a spring-loaded valve which opens when the pressure reaches a predetermined point. Should the water become overheated to 200° F, a fusible disc melts and lets the water escape thereby preventing a further increase in temperature.

The Titan Relief Valve serves as a coupling connected in the line thereby eliminating the necessity and expense of a tee fitting. To replace fusible disc, it is not necessary to disassemble valves or piping in any way.

Design for application to storage or range boilers. Prevents corrosion, scalding and explosion.

Catalog and full information upon request.

The Titan Valve & Manufacturing Company

Thermostats • Safety Pilots • Relief Valves • Safetystats
9913 Elk Avenue Cleveland, Ohio

CRUSE-KEMPER COMPANY

STEEL PLATE CONSTRUCTION

AMBLER, PA.

GAS HOLDERS

HOLDER INSPECTION

RIVETED OR WELDED FABRICATION & ERECTION

TANKS, BINS, FLUES PURIFIERS, WELDINGS

The ONE TRENCHER That Really

FITS THE JOB—

CLEVELAND BABY DIGGER

Preferred Equipment for GAS DISTRIBUTION Work

Compact, fast, flexible, mobile, and exceedingly easy to operate, Clevelands exactly meet conditions, whether it's a cross-country transmission line or a short service extension in the city—*Clevelands Save More Because They Do More—*

You Take No Chance on "Clevelands" for They Are Sold On a Guaranteed Satisfaction Basis.

THE CLEVELAND TRENCHER COMPANY

"Pioneer of the Small Trencher"

20100 ST. CLAIR AVE. • CLEVELAND, OHIO

News of the Gas Industry

Nominating Committee of A. G. A. Reports for 1940-41

In compliance with Section 2 of Article II of its by-laws, the American Gas Association makes announcement to the membership of the following report of the General Nominating Committee which will be presented to the annual convention in Atlantic City in October:

For President—T. J. Strickler, Vice-President and General Manager, Kansas City Gas Company, Kansas City, Missouri.

For First Vice-President—George F. Mitchell, President, The Peoples Gas Light and Coke Company, Chicago, Ill.

For Second Vice-President—George S. Hawley, President, The Bridgeport Gas Light Company, Bridgeport, Conn.

For Treasurer—Ernest R. Acker, President, Central Hudson Gas and Electric Corporation, Poughkeepsie, N. Y.

For Directors—two-year terms:

—John W. Batten, Vice-President, Michigan Consolidated Gas Company, Detroit, Michigan.

—A. F. Bridge, Vice-President and General Manager, Southern Counties Gas Company, Los Angeles, California.

—James A. Brown, Engineer in Charge of Gas Operations, The Commonwealth & Southern Corporation, New York, N. Y.

—D. W. Harris, Vice-President and General Manager, Arkansas Natural Gas Corporation, Shreveport, Louisiana.

—Conrad N. Lauer, President, The Philadelphia Gas Works Company, Philadelphia, Pa.

—H. N. Mallon, President, Dresser Manufacturing Company, Bradford, Pa.

—F. H. Payne, President, American Meter Company, Erie, Pa.

—Herman Russell, President, Rochester Gas and Electric Corporation, Rochester, New York.

—N. T. Sellman, Assistant Vice-President, Consolidated Edison Co. of N. Y., New York, N. Y.

—Marcy L. Sperry, President, Washington Gas Light Company, Washington, D. C.

—P. S. Young, Chairman of the Executive Committee, Public Service Electric and Gas Company, Newark, New Jersey.

Respectfully submitted,
R. L. Fletcher,
Chairman
A. M. Ambrose
H. C. Blackwell
F. M. Banks
E. P. Prezzano
Earl W. Roberts
General Nominating Committee

The following have been nominated by section nominating committees to serve as section officers for the next Association year:

Accounting Section
For Chairman: E. N. Keller, Philadelphia Electric Company, Philadelphia, Pa.
For Vice-Chairman: Lyman L. Dyer, Lone Star Gas Company, Dallas, Texas.

Commercial Section
For Chairman: R. J. Rutherford, Worcester Gas Light Company, Worcester, Mass.
For Vice-Chairman: E. J. Boyer, Minneapolis Gas Light Company, Minneapolis, Minn.

Industrial Gas Section
For Chairman: H. Carl Wolf, Atlanta Gas Light Co., Atlanta, Ga.
For Vice-Chairman: George F. B. Owens, The Brooklyn Union Gas Company, Brooklyn, New York.

Manufacturers Section
For Chairman: Watson E. Derwent, Geo. D. Roper Corporation, Rockford, Illinois.

Natural Gas Section
For Chairman: Harry D. Hancock, Gas Advisers, Inc., New York, N. Y.
For Vice-Chairman: J. French Robinson, The Peoples Natural Gas Company, Pittsburgh, Pa.

Publicity & Advertising
For Chairman: Charles A. Tattersall, Niagara-Hudson Power Corporation, New York, N. Y.

Technical Section
For Chairman: D. P. Hartson, Equitable Gas Company, Pittsburgh, Pa.
For Vice-Chairman: Harold L. Gaidry, New Orleans Public Service, Inc., New Orleans, La.

CONVENTION CALENDAR

August

19-21 *Appalachian Gas Measurement Short Course,* Morgantown, W. Va.

September

6-7 *Maryland Utilities Assn.* Annual Fall Convention, Ocean City, Md.

18-20 *Pacific Coast Gas Assn.* Annual Convention, Hotel del Coronado, Coronado, Calif.

26-27 *Empire State Gas & Electric Assn.,* Annual Convention, Westchester Country Club, Rye, N. Y.

October

7-11 *American Gas Assn.* Twenty-second Annual Convention, Atlantic City, N. J.

Canadian Gas Association Elects Manufacturer as President

Canadian gas men are real democrats when it comes to giving an honored place to any person who takes an interest in the problems of the gas industry, for it is an unusual thing to hear of a manufacturer of equipment being elected to the highest office a gas association can give, that of the presidency. The Canadian Gas Association has just recently concluded its 33rd Annual Convention at Jasper Park Lodge, Alberta, at which time the presidency was conferred upon a manufacturer in the person of Mr. J. B. McNary, Manager and Secretary, Canadian Meter Company, Limited, Hamilton, Ontario.

J. B. McNary

To Mr. McNary goes the honor of being the first manufacturer to enjoy this distinction of being the president of a national gas organization, so far as we have any record. Mr. McNary has been a popular and honored member of the Canadian Gas Association, and an active worker on behalf of the gas utilities almost since its organization. He is also a director of the Natural Gas & Petroleum Association of Ontario, and we can feel assured that his election to the presidency of the Canadian society will be received with a deal of pleasure by all who know him.

The elections at Jasper Park showed the following members placed in office for the year 1940-41:

President—J. B. McNary, Manager and Secretary, Canadian Meter Co., Inc., Hamilton, Ont.

1st Vice-Pres.—W. J. Pead, Jr., Chief Engineer Gas Dep't., Montreal, Light, Heat & Power Co., Montreal, Que.

2nd Vice-Pres.—Frank J. Howell, Division Sup't., Dominion Natural Gas Co., Ltd., Brantford, Ont.

Secretary-Treasurer—George W. Allen, 7 Astley Avenue, Toronto, Ont.

No definite decision has been made as to the time and place of the next annual meeting, but most likely it will be held somewhere in the Province of Ontario.

Over 176 attended the Convention at Jasper Park Lodge, and all report an exceptionally fine meeting.

Whiting Succeeds Willkie as President of Commonwealth & Southern Corp.

Commonwealth & Southern Corporation of Delaware at a meeting of the directors on July 17th, elected Justin R. Whiting president of the corporation to fill the vacancy created by the resignation of Wendell L. Willkie when he was nominated as the Republican presidential candidate. Later the directors reassembled in New York and elected Mr. Whiting president of Commonwealth & Southern Corp. of New York, mutual service subsidiary of the Delaware company. He also was elected chairman of the board of Consumers Power Co., largest operating subsidiary in the Commonwealth & Southern system. Mr. Whiting was also elected a director of the three companies.

The new head of the utility system has been associated with the company and its predecessors since 1912. He succeeded Mr. Willkie as partner of John C. Weadock in 1933 when Mr. Willkie was elected president of the system. It was from the post as general counsel of Commonwealth & Southern that Mr. Whiting was promoted to the chief executive post.

Mr. Whiting was born at St. Clair, Mich., in 1886, the son of Justin R. Whiting, a member of the 51st, 52nd and 53rd Congresses. He received his law degree in 1907 from the University of Michigan. He began the practice of law at Port Huron, Mich., and in 1908 moved to Jackson, Mich., where he engaged in general practice. Among his clients were companies affiliated with predecessors of the Commonwealth & Southern Corp.

Pacific Coast Gas Association Submits Nominations for Officers

The Nominating Committee of the Pacific Coast Gas Association has submitted the following nominations for the coming year:

For President—Robert A. Hornby, Vice-President Pacific Lighting Corporation, San Francisco.

For Vice-President—W. G. Vincent, Vice-President-Executive Engineer Pacific Gas and Electric Company, San Francisco.

For Treasurer—D. G. Martin, General Auditor Pacific Gas and Electric Company, San Francisco.

For Directors—W. R. Smith, Vice-President Continental Water Heater Company, Los Angeles.

R. G. Barnett, Vice-President-General Manager Portland Gas & Coke Company, Portland.

H. W. Edmund, Sales Manager Coast Counties Gas & Electric Co., Santa Cruz.

W. C. Mainwaring, Sales Manager British Columbia Elec. Ry Co., Vancouver, B. C.

Nominating Committee—Mr. Norman R. McKee, Los Angeles, (Chairman); Mr. Edward H. Coe, Phoenix; Mr. E. L. Hall, Portland; Mr. Walter H. Davis, Oakland; Mr. Hal Singleton, Lynwood, Cal.

This Advertisement Prepared
By Virginia Peslan
SCHOOL OF JOURNALISM—UNIVERSITY OF WISCONSIN
This advertisement is entered in The Madison Newspapers and the School of Journalism Ad-Writing Contest. Prizes are being offered for the best judged ads. Readers are asked to select the best six ads of the group—1st, 2nd, 3rd, 4th, 5th, and 6th. Readers will also receive cash prizes if their selection coincides with that of the judges.
SHE IS ONLY A BRIDE
But She is Already Prepared for His Healthy Appetite with a
MODERN ROPER GAS RANGE
For beauty, speed, and economy, and finer cooking results, she too, like thousands of other young brides, has turned to the many advantages offered her by a Roper, America's finest Gas Range.
Why not pay for a new Roper Gas Range with your savings on food, fuel, and time and enjoy the new click "simmer speed" top burners, controlled heat, smokeless broiler, scientific insulation, and many other features offered you by a Roper Gas Range. Stop in today and look over the many beautiful models. Our special easy terms make it easy for you to own a new Roper Gas Range.
SPECIAL TERMS .... only $1.00 down
Balance in 30 Equal Monthly Payments
LIBERAL ALLOWANCE FOR YOUR OLD RANGE
Madison Gas & Electric Co.
100 N. Fairchild St. Phone Badger 4400
QUALITY MERCHANDISE AT REASONABLE PRICES

One of the Advertisements. Original Size 2 Col. x 11½"

Ad-Writing Contest Enlivens Utility Program in Newspapers

Something with a new reader interest was recently injected into a series of advertisements used by business houses of Madison, Wis. Among those co-operating in this was the Madison Gas & Electric Co. Each of the advertisements was prepared by a student of the University of Wisconsin School of Journalism and was entered in an ad writing contest.

Above each ad, a separate box bore the name of the contestant who had written the advertisement, a statement concerning the contest and the request that the readers select the best six advertisements of the group. This was to aid in the selection of the student prize winners. Prizes also were offered to readers whose selections coincided with those of the judges.

The contest attracted wide attention and resulted in a close scrutiny of each of the ads entered.

Ruud Mfg. Co., and Welsbach Co. Consolidate on Water Heating Equipment

Based on a "partnership of progress," Ruud Manufacturing Company of Pittsburgh and the Welsbach Company of Gloucester, N. J., have consolidated their gas water heating equipment business.

Both companies were established over a half century ago and have continued in the forefront among gas appliance manufacturers. Both have grown with the industry and contributed substantially to its growth along with their own.

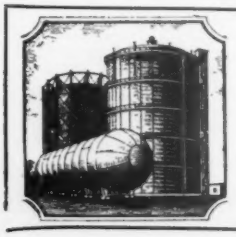
Bartlett & Co. of Philadelphia, continuing as Ruud distributors will also handle the Welsbach line with an expansion of their facilities. A well equipped, modern factory in Philadelphia to manufacture both brands of heaters for Atlantic Seaboard deliveries is being established. Research and engineering will be continued on an increased scale.

"Touched" for a Week's Pay!

A college professor, meditating about the semantics of taxation, has found that the word "tax" comes from the old Latin word, "taxare," meaning to touch sharply. The slang expression "to touch" a friend for a loan until pay day comes from the same root.

The Romans were touched heavily and knew full well the meaning of taxes. Historians say that among the causes of the decline of the Roman Empire were the numerous and high taxes and the softening of morale of those living on the touches.

In the United States the touching process is in crescendo. Prominent among the modern touches is the gasoline tax. Although but two decades old, the gasoline tax is yielding currently revenue to the state and federal governments in excess of one billion dollars annually. Two out of every three families in the United States own automobiles and they are touched by gasoline taxes an average of more than $35 annually. Since a majority of the car-owning families have incomes of less than $30 a week, the gasoline touch is equivalent to one whole week's income for such families.



STACEY BROTHERS
Gas Construction Co., Inc.
"STACEY-KLONNE" & TELESCOPIC GAS HOLDERS "STACEY BULLET" PRESSURE HOLDERS
PURIFIERS AND STEEL PLATE CONSTRUCTION
Executive Offices: Cincinnati, Ohio
Eastern Office 21 West St., N. Y. C.

Paul Payton, Service Engineer, with Field Truck

Pittsburgh Equitable—Merco Nordstrom Install Field Service Truck in Midwest

As a service and convenience to their many customers in the Midwest, the Pittsburgh Equitable Meter Co. and subsidiary, the Merco Nordstrom Valve Co., now have in operation, from their Chicago office, a completely equipped field service truck.

This truck is fitted with the necessary tools, lubricants and test apparatus to handle properly the field maintenance of EMCO and Nordstrom products. It is in charge of Mr. Paul Payton, service engineer, who is thoroughly trained in factory methods and maintenance procedure on all the companies' products.

Captain A. E. Higgins, Sales Manager, also announced that a similar unit has been ordered for use in the Mid-Continent area, to operate out of the Tulsa office and that additional service trucks would be placed in service in the near future in other sections of the country.

Coal Research of Bureau of Mines

Accomplishments in research on coal by the Technologic Branch of the Bureau of Mines, U. S. Department of the Interior, during the fiscal year 1939, are summarized in a report recently issued.

Investigations in the field of utilization have included combustion, coke-and-gas making, and the production of motor fuels by hydrogenation. Carbonization studies have added a number of coals to the survey of coke-, gas-, and byproduct-making properties of American coals. The swelling properties of coals in coke ovens have been studied, together with gas pressures in uncoked portions during coking; the properties of sub-bituminous coals in relation to their carbonizing properties were investigated.

Copies of this report, Information Circular 7105, may be obtained from the Bureau of Mines, Washington, D. C.

Casing Bushing. Two-page, 8½x11 bulletin No. 402, illustrates and describes new Casing Bushing, Style 83, for making closures between pipe and protective casing, such as is used under railroad tracks, highways, embankments, etc. Outlines advantages of product, such as elimination of pipe corrosion, absorption of vibration, protection of coating, elimination of open trench, easy assembly, and low cost. Four types available. Dresser Manufacturing Company, Bradford, Pa.

Book Review

B. & G. Handbook. A manual of instruction covering design and installation of water heating systems and forced hot water house heating systems. Size 5 by 8 inches, 262 pages, fully illustrated. Price $3.00, published by Bell & Gossett Co., North Chicago, Ill.

This handbook presents a simplified outline of instruction based on accepted engineering practice. Section 1 gives descriptions of various types of water heaters with diagrams illustrating installation practices. Section 2 covers instructions for proper designing and installation of one and two-pipe forced hot water systems, with diagrams. Section 3 sets forth in simple terms the subject of electrical controls with many diagrams. Section 4 includes a group of tables and data of service to the heating engineer and plumbing contractor. It is a volume that should prove of considerable value to both.

REED'S 4 WHEEL
Razor Blade Pipe Cutters

IDEAL FOR ANY TRENCH OR OTHER CLOSE QUARTER JOBS

$4.20 F. O. B. ERIE

Capacity
½" to 2"
Weight 5 lbs.

The REED FOUR WHEEL Cutter operates with a short back and forth motion through only one third of a circle. Each of the four wheels exerts the same pressure on the pipe, and all 4 therefore cut evenly and completely through the pipe at the same time.

Equipped with Reed special alloy RAZOR BLADE Wheels, which cut with remarkable ease, leave little burr, and have a long life of useful service.

A sample cutter for test and trial may be ordered on memorandum invoice, to be paid for if retained or returned for credit if unsatisfactory. Try it once, and you will use no other.

REED MFG. COMPANY
1436 W. 8th Street • ERIE, PA.

New Homes with Automatic Gas Heat Featured in Consolidated Edison Company Advertising

When you buy your home
Insist on
AUTOMATIC GAS HEATING
ONLY GAS OFFERS YOU ALL 5
dependability
cleanliness
convenience
economy
care-free operation
You wouldn't buy a new car with hard-rubber tires. And there's no more reason—in your 1940 home—why you should be forced to do without the five most essential elements of comfortable home heating which only automatic gas heat provides.
More and more, experienced builders are learning that automatic gas heat installed in new houses accomplishes more than any other single improvement in making them truly modern and in selling them quickly to desirable purchasers. It appeals especially to those home buyers who have an eye for the latest refinements in modern home construction.
Every year thousands of home owners turn to gas fuel for heating because... it is the only 100% automatic heat ... it eliminates fuel ordering, delivery and storage problems... cuts out furnace tending... maintains a uniform, healthful temperature... is clean, dependable and silent, and is backed by this company's 24-hour service.
Best of all, reduced gas heating rates now give you this de luxe home comfort at the lowest cost ever.
Insist on 1940 gas heating value for your 1940 home buying dollar!
SERVICE
CONSOLIDATED EDISON
COMPANY OF NEW YORK, INC.
SALES DEPARTMENT
CONSOLIDATED EDISON CO. OF N. Y., INC.
4 IRVING PLACE, N. Y.
Without cost or obligation to me, please send me my copy of the Directory of New Homes in Queens, the Bronx, and Westchester offering automatic gas heat.
Name
Address

How to pick a LIVABLE HOME
BE SURE your new home has automatic gas heat before you buy! Gas alone provides tomorrow's standards of heating comfort and convenience... today!
More and more, experienced builders have come to realize that careful home-buyers look upon gas heat as their assurance of truly modern home value. They have learned that automatic gas heat installed in new houses accomplishes more than any other single improvement in selling them quickly to desirable purchasers.
The swing today... more than ever before... is to gas fuel for heating because it is the only 100% automatic fuel... it eliminates fuel ordering, delivery, and storage problems... cuts out furnace tending... maintains a uniform, healthful temperature... is clean, silent, dependable, trouble-free, backed by this Company's 24-hour service. Best of all, analysis of 600 gas-heated 6-room homes in Consolidated Edison territory indicates an average cost of only $10 a month, over the year, to heat by gas!
Insist on 1940 value for your 1940 home-buying dollar. Buy a gas-heated home!
SERVICE
CONSOLIDATED EDISON CO. OF NEW YORK, INC.
SALES DEPARTMENT
CONSOLIDATED EDISON CO. OF N. Y., INC.
4 IRVING PLACE, N. Y.
Without cost or obligation to me, please send me my copy of the Directory of New Homes in Queens, the Bronx, and Westchester offering automatic gas heat.
Name
Address

Taking full advantage of seasonal buying of homes in New York City and suburbs, Consolidated Edison Company offers the lure of automatic gas heat in a series of well planned advertisements in three city dailies.

Two of these 10 inch two column ads are reproduced, their insertion being timed to capture attention on the Sunday prior to the three principal holidays. That on the left was used May 26th and the other June 30th. A third will appear in the same three papers on September 1st to fulfill the plan.

The coupon box below offers a Directory of New Homes in Queens, the Bronx and Westchester equipped with automatic gas heat.

Satisfactory inquiries have been received and an even greater response is expected from the September insertions with the advent of the heating season.

The campaign was planned and executed under the direction of Henry Obermeyer, Asst. Vice President of the Edison Company.

THE GOODMAN STOPPER

Now has the "Z" handle for easy manipulation. When locked in place it **holds.** Stopper cannot slip. Gas cannot pass. Adjusted in 30 seconds.

Ask for circulars on this and other distribution equipment.

Nearly a half century of service to the Gas Industry.

The Reliable Shut-Off for Street Mains

Safety Gas Main Stopper Co.
523 Atlantic Avenue, Brooklyn, New York

The "Fountains of Flame and Water" at the gas industries' exhibit group at the New York World's Fair is an instance of the glamour which night illumination gives to the exposition. The fountains are so arranged that flames of gas of ever-changing color shoot up through columns of mist and columns of water.

Low-Pressure Gas Flow Meter: Mechanical meter for flow measurement at pressure differentials of 2, 4, or 6 inches of water. Details of design and method of operation are explained. Bulletin 2089. Cochrane Corporation, Philadelphia, Pa.

Liquid Level Meter: Five different methods of liquid level measurement are offered in conjunction with indicating, recording, and integrating receivers. Line drawings and technical details explain operation. Bulletin 2090. Cochrane Corporation, Philadelphia, Pa.

Flow Meters. The Brown Instrument Company, Philadelphia, has published a catalog No. 2203 . . . Brown Mechanical Flow Meters. It covers the complete line of mechanical Flow Meters—Indicators, Recorders and Air-Operated Flow Controllers now furnished in the modern rectangular case.

Thermocouples. A 40-page catalog N33A issued by Leeds and Northrup Company, Philadelphia, Pa., lists a comprehensive line of thermocouple assemblies with their parts and accessories. Tabulated in easy-to-use form, this information is a guide to the best choice of couple for the application at hand. Illustrations and listings are so arranged that parts and accessories, as well as complete assemblies, are easily identified.

Uniforms. Hanover Uniform Co. of Baltimore has issued a 16 page catalog of complete uniforms for employees including caps, belts, etc. Swatches of fabrics available in many appropriate weights and colors are included.

Petroleum and Natural-Gas Research

A report issued by the Bureau of Mines, U. S. Department of the Interior, covers the work of its Petroleum and Natural Gas Division in the fiscal year ended June 30, 1939.

In this annual "stock taking" of the Bureau's research and operations dealing with petroleum, natural gas, helium, and their conservation, the report informs consumers, as well as engineers, research workers, and operating personnel of the industry, concerning the types of studies that are being pursued by the Bureau.

The introduction reviews briefly the changing scope of the division's activities and tells how the various projects are conducted in the stations and offices at Bartlesville, Oklahoma, Dallas and Amarillo, Texas, Laramie, Wyoming, and San Francisco, California.

In the field of transportation, research of the Bureau on "freezing" in gas pipe lines has helped natural-gas companies to maintain constant supplies of fuel at the city gates of many communities. Relatively few persons know that in transmitting gas through pipe lines under high pressure an important element of good service is to prevent formation of solids or semi-solids resembling ice or "slush." These substances, known as gas hydrates, may form in the lines when the operating temperature is considerably above 32° F., the melting point of ordinary ice.

The report closes with a review of extraction of helium from natural gas at the Amarillo plant of the Bureau of Mines, the only plant in the world now operating where this inert gas is obtained on a large scale. In addition to its use as a lifting gas for military and commercial lighter-than-air craft, increasing quantities of helium are being used by the Weather Bureau for inflating meteorological balloons. Other scientific and industrial applications are mentioned in the report, especially use as an inhalant (mixed with oxygen) to give relief to persons afflicted with asthma and other respiratory diseases as well as in diving and caisson work.

Copies of Report of Investigations 3501, Annual Report of the Petroleum and Natural Gas Division, Fiscal Year 1939, by R. A. Cattell and others, may be obtained without charge upon request to the Information Division, Bureau of Mines, Washington, D. C.

All About Arc Welding

THE NEW HANDBOOK

Your Guide to Progress

★ The new 6th edition "Procedure Handbook of Arc Welding Design and Practice" contains up-to-date facts about all aspects of arc welding and its many profitable applications. Will enable you to keep abreast of this fast-growing industry for personal advancement and profit.

★ ★ ★

Complete in every detail. In eight parts—(1) Welding Methods and Equipment. (2) Technique of Welding. (3) Procedures, Speeds and Costs. (4) Weld Metal and Methods of Testing. (5) Weldability of Metals. (6) Machine Design. (7) Structural Design. (8) Actual Applications.

Recognized throughout the world as the authentic reference book on arc welding. More than 90,000 copies of first five editions have been sold. 6th edition is an entirely NEW Handbook, containing important new information. Written clearly. Well indexed for quick reference. Size 6" x 9" x 1⅝"—ideal for use in office, shop or school. Printed on fine paper. Bound in semi-flexible simulated leather—gold embossed.

Order your copy today. Mail your order and check to

American Gas Journal, 53 Park Place, N. Y.

Carbon Black Production and Sales in 1939

Included in Mineral Market Reports M.M.S. No. 841 issued by U. S. Dept. of the Interior, Bureau of Mines, carbon black production and sales during 1939 reached record levels. The report in part states:

"The carbon black industry reached new peaks of production and consumption in 1939, due to the demands of the warring nations and to the recovery in rubber production.

"Production was 525,166,000 pounds, 10 percent more than in 1938; total sales were 560,533,000 pounds, an increase of 36 percent over 1938. Exports of carbon black passed the 200-million-pound mark for the first time; domestic sales increased 47 percent over those in 1938 and were 14 percent above the previous peak recorded in 1936.

"The position of stocks improved considerably, but prices remained distressingly low. Stocks on hand December 31, 1939, were 130,792,000 pounds compared with 166,159,000 pounds on January 1. The domestic price rallied slightly to 2.45 cents per pound compared with 2.41 cents in 1938. Export quotations continued downward, being 4.36 cents per pound compared with 4.51 cents in 1938.

"Production in the Texas Panhandle was 410,130,000 pounds, 91 percent of the State total, compared with 92 percent in 1938. The output of the whole State reached a new peak, 453,174,000 pounds, 9 percent above that of 1938. Louisiana staged a come-back, rising to 51,734,000 pounds compared with 39,534,000 pounds in 1938. Kansas and Oklahoma continued at about 20 million pounds, while Wyoming, a producer since the first statistics (1919), dropped out of the list of producers.

"Two new plants were added to the operating list; eight were dismantled or shut down, making a total of 49 operated during the year compared with 55 in 1938.

"There were 347,270 million cubic feet of gas burned in the manufacture of carbon black in 1939, compared with 324,950 million in 1938. The average yield per thousand cubic feet rose from 1.47 pounds in 1938 to 1.51 pounds in 1939. This increase was probably due to a gain in relative importance of production by "other methods" which have much higher yields than the channel process. The average value of natural gas used was 0.94 cent per thousand cubic feet in 1939 compared with 0.89 cent in 1938.

"Domestic sales of carbon black were 356,705,000 pounds, divided as follows: 316,621,000 pounds (89%) to rubber companies; 21,929,000 pounds (6%) to ink companies; 6,382,000 pounds (2%) to paint companies; and 11,773,000 pounds (3%) to miscellaneous users. These data indicate that all four classes of consumption maintained their relative positions in 1939."

"Carboseal" Anti-Leak. A 20-page bulletin published by Carbide and Carbon Chemicals Corporation incorporates in compact form all the essential facts presented in previous bulletins and technical papers on this subject, together with additional information for the benefit of users and prospective users of "Carboseal" anti-leak. Besides correcting leakage in systems distributing dry gases, this compound is described as useful in laying dust and rust in the mains so that they will not be carried into customer appliances. Other uses for "Carboseal" antileak described in the booklet are its use as a non-freezing substitute for water in U-gauges, and as a liquid for rejuvenating the packing in gate and globe valves.

Copies can be obtained from the Company at 30 East 42nd Street, New York.

Refractories. Bulletin 209 of General Refractories Co., Philadelphia, gives data on Sillimanite refractories in brick, cement and plastic form. Superior resistance to spalling and erosion is featured.

INDUSTRIAL GAS BOILERS
GARMENT PRESS BOILERS

100 lbs. ASME Code
¾ to 45 H.P.

P. M. LATTNER MFG. CO.
MAIN OFFICE
CEDAR RAPIDS, IOWA

Highest National C P Honors Captured by Barker Brothers

Barker Brothers of Los Angeles, Calif. and their top-notch Sales Staff did a remarkable C P selling job.

There are three national officers of the C P Ranger Club. These officers win their rank on the strength of their C P sales for one year. All three of the national officers for 1940 are representatives of Barker Brothers.

The National Commander is Mrs. Cora Riegelman with a grand total of 280 C P sales. The National Vice-Commander is Edmund Vojae with 227 C P sales. The National Adjutant is Robert H. Slater with 157 C P sales. A fourth member of Barker Brothers, Ralph E. Nelson, is Regional Commander of District 16 with 145 C P sales.

A fifth Barker Brothers representative, J. W. Dulon, sold approximately 147 C P Ranges last year but lost his record of sales and therefore could not compete for National honors.

The Geo. D. Roper Corporation is proud to acknowledge the fact that Barker Brothers merchandise Roper Gas Ranges.

Left to right in the picture are:—Ralph E. Nelson, Robert H. Slater, Mrs. Riegelman, J. W. Dulon and Edmund Vojae

JOHN I. BLANCHFIELD

John I. Blanchfield, assistant vice-president of The Brooklyn Union Gas Company, Brooklyn, N. Y., and a national leader in utility accounting and rate matters, died of a heart attack on June 27. He was 59 years old.

For many years Mr. Blanchfield was active in the American Gas Association. At the time of his death he was a member of the Advisory Committee of the Accounting Section and a member of the Depreciation Accounting and Uniform Classification of Accounts Committees. He was a pioneer member of the Managing Committee of the Accounting Section and served as its chairman in 1930-31. He also served as a member of the Managing Committee of the Empire State Gas and Electric Association.

Mr. Blanchfield was a member of the Rate Structure Committee for a number of years and was considered a foremost expert on utility rates.

Born in Brooklyn, Mr. Blanchfield began his public utility career as a clerk for the Kings County Lighting Company in 1906. Later he became auditor and assistant secretary of that company, leaving it in 1919 to join The Brooklyn Union Gas Company as an appraisal accountant. In 1920 he became assistant auditor, in 1927 statistician of the company, and in 1934 assistant vice-president.

M. J. CALLAHAN

Michael J. Callahan, General Street Foreman, Southern California Gas Company, died at his home in Los Angeles on Sunday, July 7. Born in Ireland in 1866, Callahan came to Los Angeles in 1911 and entered the service of the former Los Angeles Gas and Electric Company in 1919. He has held the position of General Street Foreman in Southern California Gas Company since the merger of that company with the Los Angeles Gas and Electric in 1937.

W. S. RALSTON

William Spencer Ralston, president of the Chaplin-Fulton Manufacturing Company of Pittsburgh, Pa., died on July 3, after an illness of six weeks, at the age of 70 years.

W. S. Ralston

For nearly forty years Mr. Ralston had been connected with the Chaplin-Fulton Company, and more recently president of the company, of which his father, David A. Ralston, was one of the founders. He was the inventor of a number of pressure regulators and regulator improvements. He was a member of the American Gas Association, as well as of various organizations in and around Pittsburgh, and was well known throughout the oil and gas industries.

HARRY T. SMITH

Harry T. Smith, Traffic Manager of Worthington Pump and Machinery Corporation, died at his home on July 3rd. Mr. Smith was associated with Worthington for fifty-four years, having started with the old Henry R. Worthington Hydraulic Works, then located in Brooklyn.

Popular with his associates, and admired for his ability, his passing is a great loss to all who knew him.

CLARENCE H. FRENCH

Clarence H. French, for many years manager of the Hotel Equipment Department of Standard Gas Equipment Corp., and widely known figure in the commercial cooking equipment field, died suddenly July 4, at the age of 63.

Mr. French died while on a motor trip to visit dealers at the home of one of his company's representatives, E. G. Crawford, in Elkridge, Md. He suffered a sudden heart attack and died shortly after a doctor reached him.

He was considered an authority on commercial cooking problems and was long active in the affairs of the American Gas Association and in the work of committees of the food service industry. Early in his business career he was associated with Public Service Electric and Gas Co. of New Jersey. Later he returned to the William M. Crane Co., which was merged some years ago with the Standard Gas Equipment Corp.

Michigan Gas Association Annual Meeting

The Michigan Gas Association held its annual meeting in conjunction with the Michigan Electric Light Association, at Mackinac Island, Mich., July 8-10. A joint meeting was held on the first day, and included an address by W. C. Beckjord, President, American Gas Association, A. C. Marshall, President, The Detroit Edison Co., W. E. Mitchell, V.-P. Georgia Power Co. and F. A. Newton, Commonwealth & Southern Corporation also addressed the meeting.

On Tuesday and Wednesday separate meetings were held by both associations. The program for the gas meetings covered a wide variety of subjects of present day importance.

The officers of the Michigan Gas Association elected for the ensuing year are: President, F. P. Cope, Division Manager, Consumers Power Company, Saginaw; Vice President, Henry Fink, Assistant Gen. Mgr. Michigan Consolidated Gas Co., Detroit; Secy.-Treas., re-elected

INDEX TO ADVERTISERS

Alpha Lux Co., The ..... —
American Lava Corp. ..... —
American Meter Co. 6
Autogas Corporation 25

Barber Gas Burner Co., The 25
Besse, Osborne & Odell ..... —
Blaw-Knox Company 47
Brookmire Corporation ..... —

Carbide & Carbon Chemicals Corp. ..... —
Cast Iron Pipe Research Assn., The 2
Chaplin-Fulton Mfg. Co., The 28
Cleveland Gas Meter Co. ..... —
Cleveland Trencher Co. 38
Coal Carbonizing Co. 35
Connelly Iron Sponge & Governor Co. 25
Cribben & Sexton Co. 22
Cruse-Kemper Co. 38

Dresser Mfg. Co. 17

Gas Purifying Materials Co. 45
General Coal Co. ..... —

Harper-Wyman Co. 19-20
Hays Manufacturing Co. 35
Hotel Chelsea 35

Lambert Meter Co., Inc. 28
Lattner Mfg. Co., P. M. 43
Lavino & Co., E. J. 38

Merco-Nordstrom Valve Co. 29-30
Metric Metal Works 6
Monmouth Products Co. 4
Morse Engineering Inc. ..... —

National Tube Co. ..... —

Partlow Corp., The ..... —
Phillips, Alfred I. ..... —
Pittsburgh Coal Co. ..... —
Pittsburgh Equitable Meter Co. 29-30

Reed Manufacturing Co. 41
Republic Heaters Sales Co. 25
Reynolds Gas Regulator Co. 35
Roberts-Gordon Appliance Corpn. ..... —
Robertshaw Thermostat Co. ..... Front Cover
Roper Corp., Geo. D. ..... —

Safety Gas Main Stopper Co. 42
Semet-Solvay Engineering Corp. 3
Servel Electrolux Div. ..... —
Skinner Co., M. B. ..... —
Sprague Meter Co., The ..... Fourth Cover
Stacey Bros. Gas Construction Co. 40
Superior Meter Company 24

Titan Valve & Mfg. Co., The 38

Union Carbide & Carbon Corp. ..... —
United Engineers & Constructors, Inc. ..... —

West Gas Improvement Co. ..... —
Worthington Pump and Machinery Corp. ..... —

Consistent

GPM IRON HYDROXIDE

Economical

LONG ISLAND CITY, N. Y. GAS PURIFYING MATERIALS CO. INC. PROVIDENCE, R. I.

Equipment For Sale

Coke Grader for sale. Price reasonable. New in 1936. 40 ton capacity. 15' diameter with three compartments. Motor 220 voltage. Only used one season. Manufactured by Robins Conveying Belt Company. Blueprints and detail specifications can be furnished upon request.

The Raleigh Gas Company, Raleigh, N. C.

A Book for Gas Appliance Salesmen

Domestic Gas Appliances by A. M. Apmann. Gives practical working knowledge of the technology of appliances and characteristics of fuels. Ranges, Water Heaters, House Heating and Refrigeration are fully discussed. 238 pages, many illustrations, stiff cover. Special close-out price, 50c. American Gas Journal, 53 Park Place, New York.

Annual Convention P. C. G. A. Sept. 18-20

The Annual Convention of the Pacific Coast Gas Association will be held at Coronado, Calif., Sept. 18, 19 and 20. The association's nominating committee, Norman R. McKee, chairman, will make the following nominations for officers and directors for the coming year:

For President—R. A. Hornby, Vice President, Pacific Lighting Corporation.

For Vice President—W. G. Vincent, Vice President, Pacific Gas and Electric Company.

For Treasurer—D. G. Martin, General Auditor, Pacific Gas and Electric Company.

For Directors—R. G. Barnett, Vice Pres. and Gen. Mgr., Portland Gas and Coke Company; H. W. Edmund, Sales Manager, Coast Counties Gas and Electric Co.; W. C. Mainwaring, Sales Manager, British Columbia Electric Railway Co., Ltd.; W. R. Smith, Vice President, Continental Water Heater Co.

Maryland Utilities Association

The annual Fall Convention of The Maryland Utilities Association will be held September 6 to 7 at Ocean City, Maryland. Headquarters will be George Washington Hotel.

The program will include an informal joint meeting of the Gas Electric and Transportation Groups with addresses by speakers of national reputation who will present authoritative views on topics of current interest.

Entertainment and a banquet will also be features of the meeting.

Semet-Solvay Company Acquires Wilputte Coke Oven Corporation

Semet-Solvay Company, a subsidiary of Allied Chemical & Dye Corporation, announces the acquisition of the Wilputte Coke Oven Corporation, thereby combining the ability and experience of Semet-Solvay Company, Semet-Solvay Engineering Corporation and Wilputte Coke Oven Corporation, builders of coke ovens and by-product recovery apparatus and gas generating equipment. Mr. Louis Wilputte and his staff will from now on be associated with Semet-Solvay Company.

Companies and Salesmen Win Awards in "Pioneers of Progress" Quarter

Announcement of awards in the "Pioneers of Progress" campaign to winning gas companies, their top salesmen, and of the six salesmen who are to receive Bermuda trips for outstanding sales work in the April, May and June quarter in the current nation-wide American Gas Association Refrigeration Committee sales drive has been made by Bernard T. Franck, chairman of the Committee and vice-president of the Milwaukee Gas Light Co.

Twenty-four gas companies have received a handsome exact scale model of a Pan American clipper ship for their exceptional sales work in leading their respective classifications for the three month period. Each plane model is a gleaming replica of the clipper ship which flies the route from New York, to Lisbon, Portugal. On the base of each model will be engraved the name of the winning Company, its classification and the date won.

Leading their respective divisions six salesmen by aggressive and continuous sales work topped several thousand entered in the competition to emerge victorious and receive an all expense trip to Bermuda on a Pan American clipper ship.

The high salesmen in each of the 24 winning gas companies are each being awarded cash prizes for their pace setting sales work during the second quarter. There are 49 salesmen who are to receive checks.

In addition to this the Home Service departments of winning gas companies will be each given a $25.00 cash award.

"The remarkable sales initiative of the winning companies has won for them this inspiring trophy," Mr. Franck stated. "Since the campaign opened January 1, participating companies have broken all sales records in the first year-round sales campaign.

"The 'Pioneers of Progress' quarter of the main contest saw all participating companies surge forward in furious competition. The months of April, May and June have been a traditional time for the American Gas Association Refrigeration Committee sales drives and the eyes of all participating companies were focused on this period to turn in the best sales records in their company's history.

"Evidence of the fierce contest waged mounted up with the reports which monthly pour into our headquarters in New York City. Past sales records toppled one after another until the gas industry as a whole stood on new sales peaks.

"The reports of individual achievement of participating salesmen showed that these men and women were out to surpass all existing sales records.

"The enthusiastic rivalry among the several thousand registered salesmen made this contest the most exciting of all the gas refrigeration sales campaigns conducted by the A. G. A. Refrigeration Committee.

"Leading the hard fought contest five men and one woman have been awarded honor flights to Bermuda on the giant flying clipper ship when it leaves Atlantic City next October.

"The remaining period of the campaign will decide who will win the hotly contested 'Annual Best Performance Awards.' In October the 24 companies winning this award will each select a representative to make the Bermuda flight.

"The thirty sales pilots will board the clipper after the annual convention of the A. G. A. closes. We of the Committee cannot too strongly urge the industry to maintain the high pitch of their activity up to the last day of the campaign. Much interest and enthusiasm has been built up in this contest. By a continuing activity increased sales income and load building will accrue to the industry."

The six salesmen who have won flights to Bermuda are:

Division 1—Marianne Billies, Brooklyn Union Gas Company.
Division 2—Ernest Audino, Providence Gas Company.
Division 3—Albert Timmer, Muskegon Gas Company.
Division 4—E. Hackathorn, East Ohio Gas Company, Akron, Ohio.
Division 5—W. B. Gilmer, Alabama Gas Company, Montgomery, Alabama.
Division 6—R. W. Smith, Georgia Public Utilities Co., Griffin, Georgia.

The winning companies are:

Greatest number of installations per 10,000 meters:
Division 1—Southern Counties Gas Company, Los Angeles.
Division 2—Providence Gas Company, Providence, R. I.
Division 3—Metropolitan Edison Company, Easton, Pa.
Division 4—Mobile Gas Service Corp., Mobile, Alabama.
Division 5—Macon Gas Company, Macon, Georgia.

Greatest total installations reported:
Division 1—Brooklyn Union Gas Company, Brooklyn, N. Y.
Division 2—Milwaukee Gas Light Company, Milwaukee, Wis.
Division 3—Metropolitan Edison Company, Easton, Pa.
Division 4—Ohio Fuel Gas Company, Columbus, Ohio.
Division 5—Macon Gas Company, Macon, Georgia.
Division 6—Virginia Gas Distribution Corp., Staunton, Virginia.

Greatest percent of increase in installations over the reported 1939 installations:
Division 1—Southern Counties Gas Company, Los Angeles, Cal.
Division 2—Public Service Electric & Gas Co., Trenton, New Jersey.
Division 3—Florida Power & Light Company, Miami, Florida.
Division 4—Equitable Gas Company, Pittsburgh, Pa.
Division 5—Alabama Gas Company, Montgomery, Alabama.
Division 6—Citizens Gas Fuel Company, Adrian, Michigan.

Greatest percent of replacement installations of outmoded automatic refrigerators of total installations for period:
Division 1—Peoples Gas Light & Coke Company, Chicago, Ill.
Division 2—Consumers Gas Company, Reading, Pa.
Division 3—Roanoke Gas Company, Roanoke, Virginia.
Division 4—Ohio Fuel Gas Company, Springfield, Ohio.
Division 5—Ohio Fuel Gas Company (Parma Group), Elyria, Ohio.

Greatest number of individual retail installations sold at the prevailing retail prices and under the policies of each company.
Division 1—Southern California Gas Company, Los Angeles, Cal.

Greatest number of installations per 1,000 meters:
Division 6—Georgia Public Utilities, Aiken, South Carolina.

"New Horizons" an Added Theme for Refrigerator Sales Campaign

The final phase of the first year-round gas refrigerator selling campaign conducted by the American Gas Association Refrigeration Committee got under way July 1 and will end September 25. Announcement of the drive which will be known as "New Horizons" campaign and the awards that are offered to participating salesmen, was made by Bernard T. Franck, chairman of the Refrigeration Committee.

A portfolio distributed to the several hundred participating companies containing complete information regarding the terms of the campaign carries a preface by Walter C. Beckjord, president of the A. G. A., Davis B. DeBard, chairman of the Commercial Section of the A.G.A., and Mr. Franck in which these leaders stress the importance of the campaign to the gas industry.

Mr. Beckjord states: "I do not know of a time when the Gas Industry was in a better position to go forward than it is today. We have everything in our favor, sound economics as a basis for production and distribution, concentrated sales effort, greater enthusiasm on the part of our employees and a line of equipment that is equal, and in many cases superior to any on the market. The only way we can go is upward, and I am sure we will uphold the traditions of the past and make the most of the rich horizons that lie ahead."

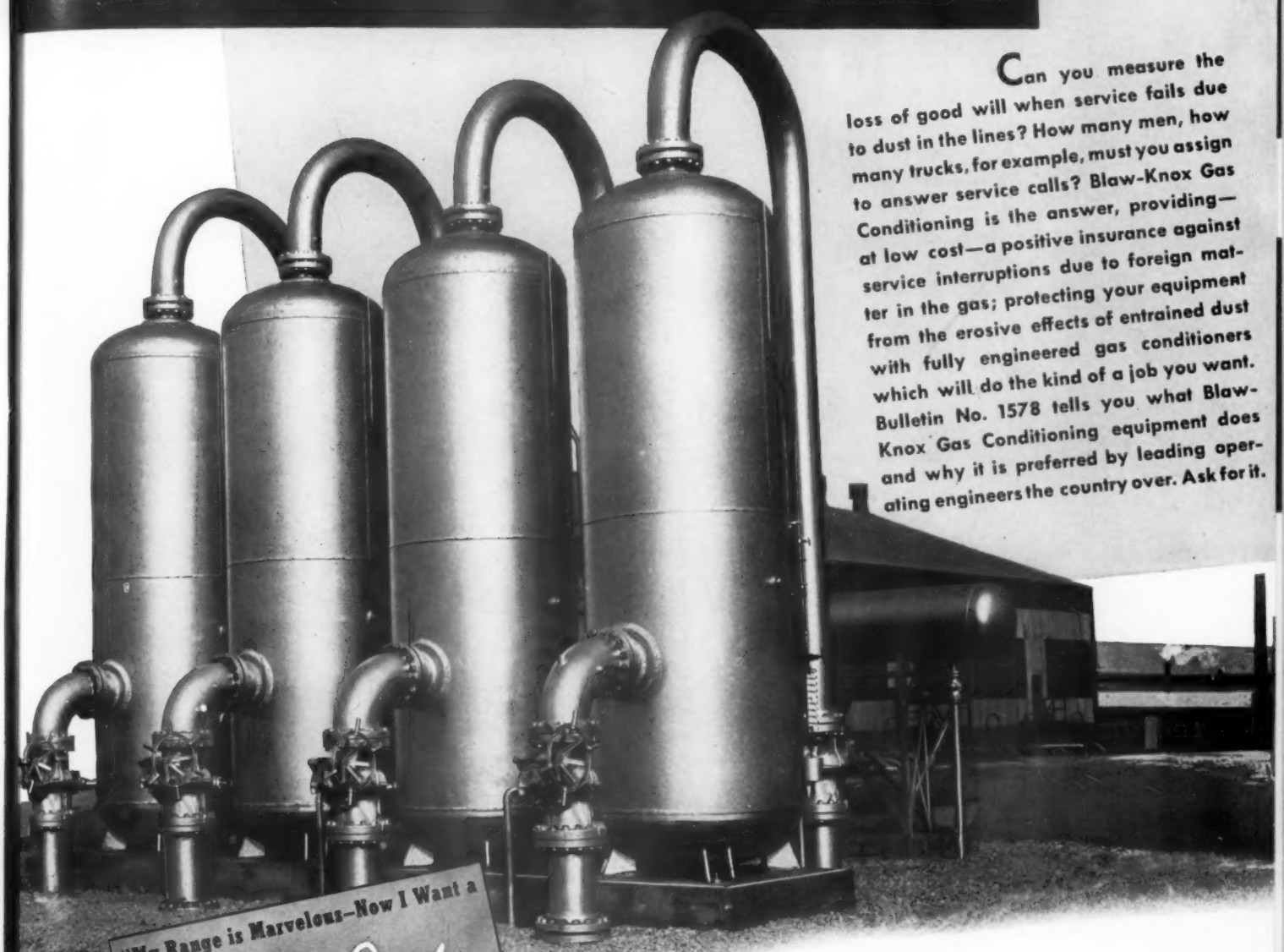
Indicating the superiority of the Servel Electrolux refrigerator, Mr. DeBard said: "Every day brings new proof of the tremendous opportunity for leadership and profitable load-building which the gas refrigerator offers the industry and each individual company."

A Correction

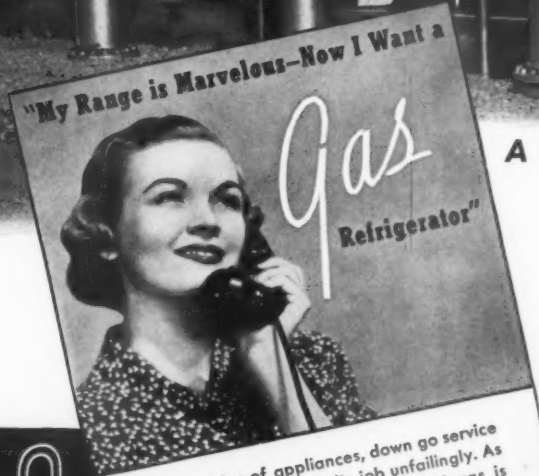
In the description of equipment installed at a Santa Monica Apartment Hotel, reference was made on page 44 of the July issue to the refrigerators. These were installed by Southern Counties Gas Co.—not by Southern California Gas Co., as stated.

HUGHES PRINTING CO.
EAST STROUDSBURG, PA.

More Profit in Blaw-Knox *Conditioned* GAS!



Can you measure the loss of good will when service fails due to dust in the lines? How many men, how many trucks, for example, must you assign to answer service calls? Blaw-Knox Gas Conditioning is the answer, providing—at low cost—a positive insurance against service interruptions due to foreign matter in the gas; protecting your equipment from the erosive effects of entrained dust with fully engineered gas conditioners which will do the kind of a job you want. Bulletin No. 1578 tells you what Blaw-Knox Gas Conditioning equipment does and why it is preferred by leading operating engineers the country over. Ask for it.



Up go sales of appliances, down go service costs when GAS does its job unfailingly. As engineers know, nothing but CLEAN gas is dependable . . . especially when used with modern appliances which have smaller apertures and more delicate mechanisms.

A few of the many advantages of Blaw-Knox Gas Conditionir

1—High capacity; gives full value per dollar invested.

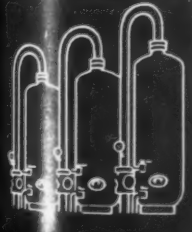
2—Gas is thoroughly cleaned, no half measures. Dust and other foreign matter is dynamically forced into intimate contact with washing liquid.

3—Delivers perfectly clean, dry gas (if desired, equipment will resaturate with oil or water vapor).

4—Pressure losses cut. Very little loss in contacting and separating sections.

5—Dust and dirt are completely removed from gas flow.

6—Blaw-Knox Gas Conditioners are the result of many years' research and experience in dust removal and separation of liquids from gas.



BLAW-KNOX
GAS CONDITIONERS

BLAW-KNOX DIVISION of Blaw-Knox Company · FARMERS BANK BLDG., PITTSBURGH, PA.

S IMPLICITY OF CONSTRUCTION

P ARTS INTERCHANGEABLE

R EDUCED OPERATING COSTS

A CCURACY IN REGISTRATION

G IVES SATISFACTORY SERVICE

U NIFORM PERFORMANCE

E FFICIENT AND DEPENDABLE IN MANUFACTURED, NATURAL AND BUTANE GASES

SPRAGUE METER CO., BRIDGEPORT, CONN.